

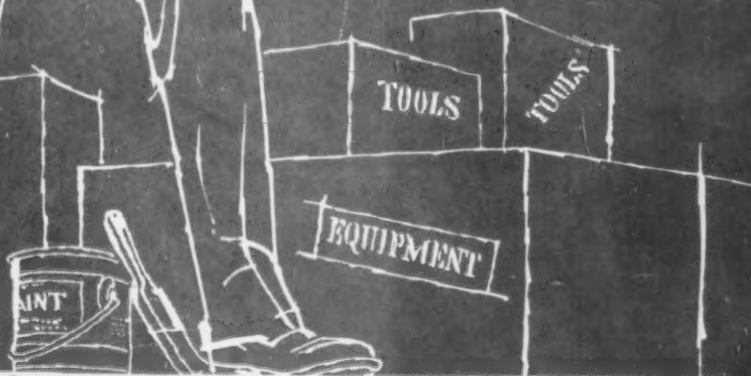
MOTOR AGE

A CHILTON PUBLICATION

DECEMBER 1960



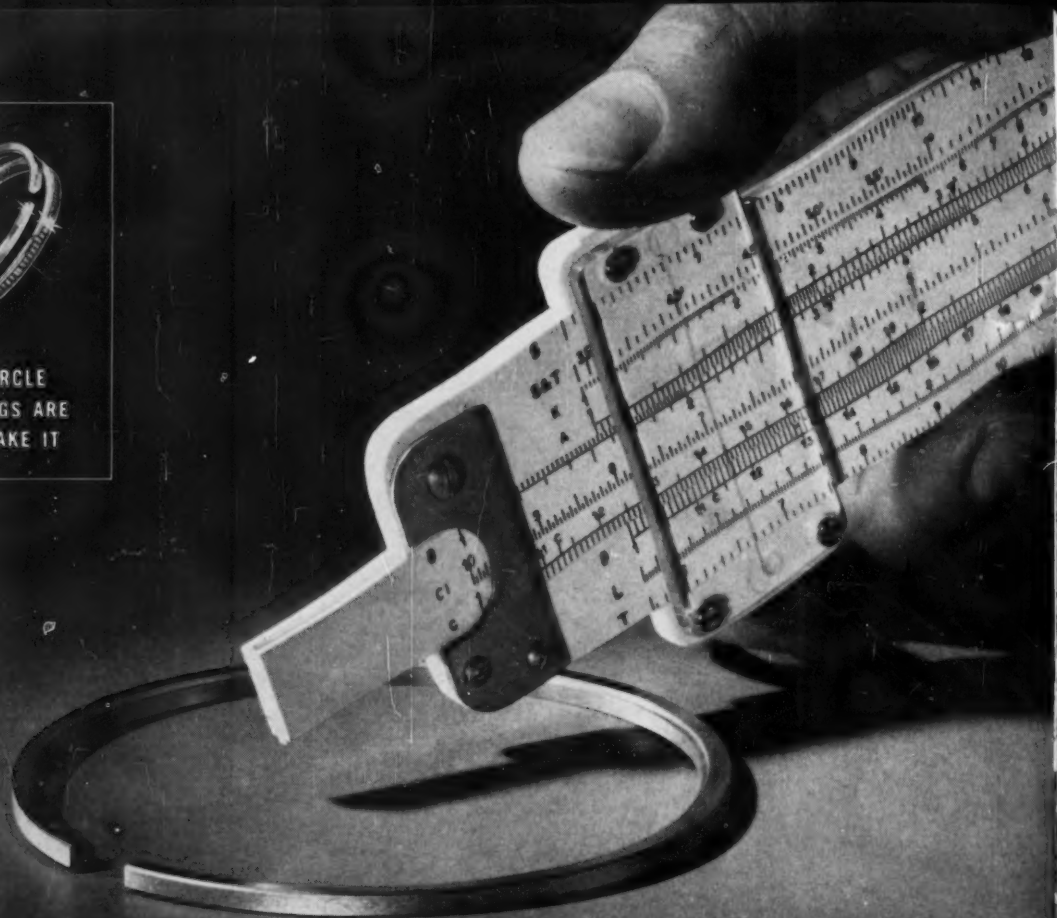
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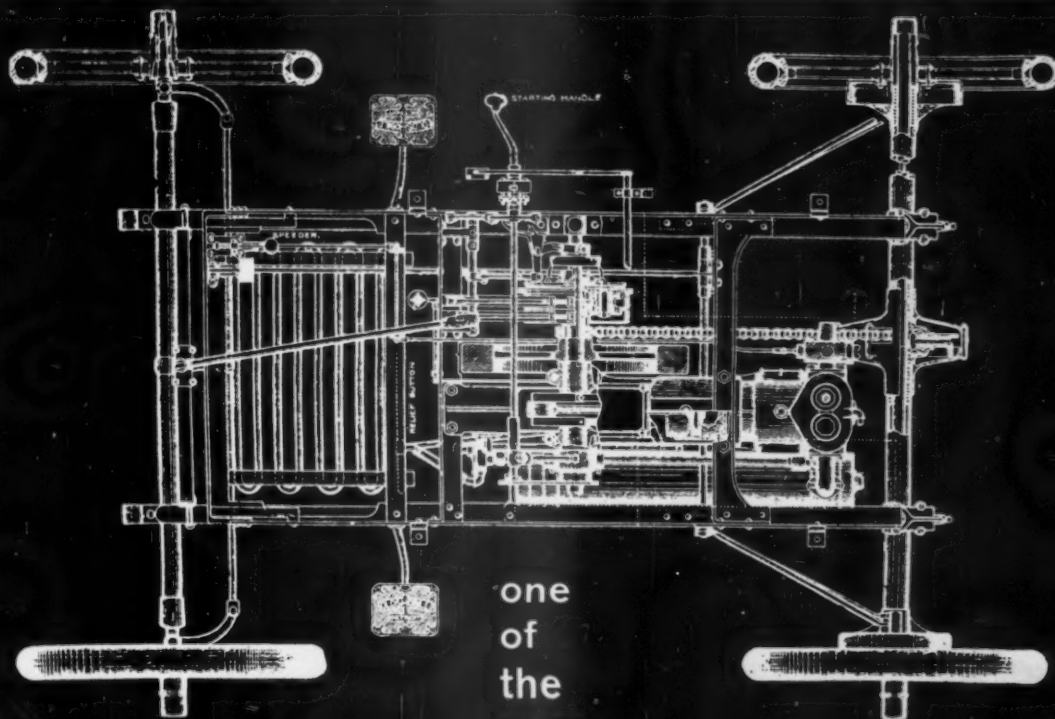
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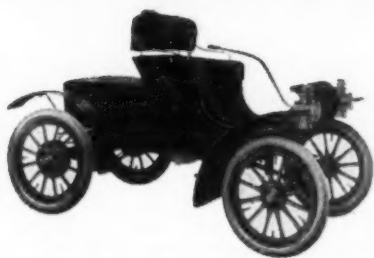
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you
can't
tune up
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a Hygrade
Jiffy Kit

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You can tune up over 90% of all cars on the road with one economical assortment of Hygrade Jiffy Kits. Jiffy Kits contain needle valves and seats, gaskets, economizer valves, pump pistons, instructions and tools—to fit all carburetors: Carter, Stromberg, Ford, Holley, Rochester...and small engines, too!

See your jobber or write HYGRADE PRODUCTS DIVISION, Standard Motor Products, Inc., Long Island City 1, New York.

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a kit for almost every car

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says **B. H. BROTHERTON**, General Manager,
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Memphis, Tennessee

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THIS BIG ELECTRIC BLANKET DEAL!

It's yours from Delco Battery and Packard Cable, and it's a beauty . . . a CASCO Electric Blanket, the perfect gift for the lady of your house! This wonderful blanket, available in twin or double bed size, features contour design with thermostat control, and arrives just in time for cool weather comfort . . . and the upswing in replacement battery and cable sales.

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So whether you handle batteries, cables, or both, here's a fine opportunity to blanket your family with warmth and comfort. Your United Motors Service supplier is the man to see.

DELCO BATTERIES and PACKARD CABLE . . . reliable products of GENERAL MOTORS . . .
distributed nationally through



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DECEMBER 1960

Volume 80, No. 1

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THE
CORK**



**FROM
INSIDE
OUT**

makes A-V gaskets better for you

How's it done? Electronically, of course—and it's exclusive with Armstrong-Victor cork gaskets. The cork composition is cured with a high-frequency heat that penetrates deeply—works from the inside out for uniform baking all the way through. Electronic baking preserves the cork's natural resiliency—produces a denser, stronger structure—never under- or over-cured as so often happens with steam-heat curing.

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Blackhawk
HAND TOOLS

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LOCKHEED BRAKE PARTS, FLUID, BRAKE LINING and LINED BRAKE SHOES • AIR HORNS • AIR BRAKES • TACHOGRAPHS

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HYDRAULIC REPLACEMENT BRAKE PARTS

fit right...work right...

because they are made to original equipment standards of quality

You help protect the lives of your customers when you use Wagner Lockheed Replacement Brake Parts... These top-quality products fit and function correctly because they are manufactured by the same machinery — to the same specifications — as Wagner parts used for original equipment.

Line includes master and wheel cylinders, repair kits, pistons, springs, washers, cups, hose and all related items for every make and model vehicle. Available individually or in factory sealed kits.

Every product in this top-quality line is engineered to perform safely at the higher tempera-

tures generated in modern braking. This enables you to turn out better, safer brake jobs — and make more satisfied customers.

There's a supplier of Wagner Products located near you. Look to him for Wagner Lockheed Brake Parts, Brake Fluid, Power Brake Repair Kits, Brake Lining and Lined Brake Shoe Sets ... one call gets all!

Ask for details, or use coupon for FREE copy of 1960 Catalog AU-1. Also ask about how easily you can qualify to become a Wagner Franchised Dealer — and enjoy many special benefits.



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Wagner Electric Corporation

6362 Plymouth Ave., St. Louis 33, Mo., U. S. A.
(Branches in principal cities in U.S. and in Canada)

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- ☐ FREE copy of 1960 Catalog AU-1
- ☐ Details on Franchised Dealer Program

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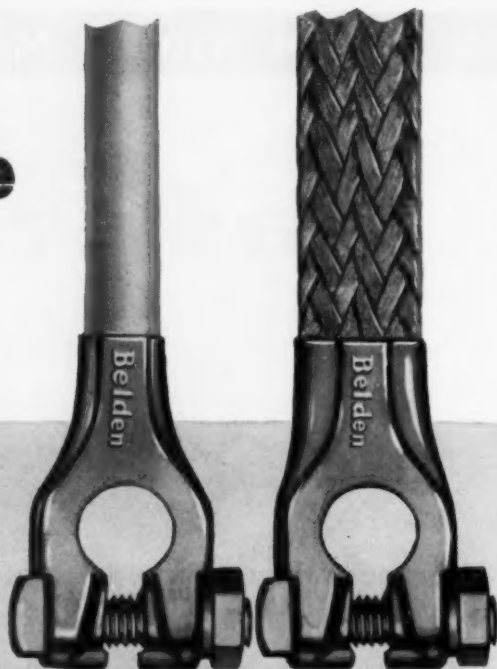
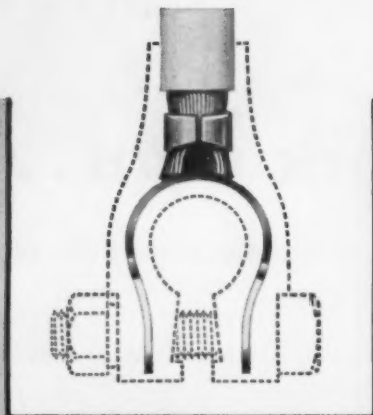
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WP60-1

Good connections start with

Belden Nokrode

Battery Cables



Belden Nokrode Terminals give a perfect electrical connection because they are die-cast around a steel frame and securely anchored to the conductor. Lugs are formed over the full conductor to provide positive contact between conductor and terminal—completely eliminating resistance.

Ignition system failures can often be traced to a faulty battery cable. For full starting power under all loads, install Belden Nokrode Battery Cables. Belden Nokrode Cables, with their specially compounded insulation, reduce battery cable failure under all operating conditions by providing maximum resistance to aging, oil, acids, and weathering.



One Wire Source for Everything Automotive

Battery Cable • Ignition Wire • Primary Wire • Starter Cable
• Trailer Lead Wires • Terminals • Cord-Reels and Cordlites •
Extension Cords • Accessories



Ask your Belden Jobber about this Belden complete changeover battery cable assortment with rack for easier stocking and display. Available in 6- and 12-volt cable assortments. Replacement cables shipped individually packaged in standard Belden cartons.



LET MOPAR HELP YOU START THE NEW YEAR RIGHT WITH THE RIGHT PARTS INVENTORY FOR YOUR NEEDS

This is year-end inventory and stock renewal time. The action you take right now may go a long way toward determining the profits you can expect from your parts and accessories business next year.

To help you select fast-moving, quality replacement parts, a good man to consult is your MoPar Wholesaler or Dealer. He is familiar with conditions in your locality. And he handles the line that is precision-engineered to meet the exacting specifications of Chrysler Corporation.

Call your MoPar Wholesaler or your Plymouth Valiant • Dodge Dart Lancer • De Soto Chrysler Imperial or Dodge Truck Dealer today. He can help you stock the items that meet your local needs.

With the help of the MoPar man, you know you'll have the right part at the right place at the right time!

***Sell the line that keeps your customers
sold on you all year long—MoPar***



For **Extra** Headlamp Profits:

Sell Lamps with Other Services



Tie in headlamp sales with your regular service work. Check headlamps before you start that lube job. Replace broken headlamps and burnouts when the car's on the rack. It takes only a few minutes to install a pair of Vision-Aid Headlamps . . . a few minutes to rack up extra profits!

Vision-Aid Headlamps — initial equipment choice of leading car manufacturers — insure these extra profits. Vision-Aid Headlamps provide the kind of illumination

your customers should have: sharper, more accurate low beams directed down the right side of the road, away from oncoming traffic . . . distance-devouring high beams that provide greater visibility on the open highway . . . and long, reliable service.

Insure your service work and your profits. Tell your supplier to make 'em Vision-Aid Headlamps. Automotive Products Division, Tung-Sol Electric Inc., Newark 4, New Jersey.



HEADLAMPS • MINIATURE LAMPS • FLASHERS

Fitzgerald Gaskets

have the
answer!

first
WITH

FUSED
ALUMINUM

STEEL
AND
ASBESTOS
GASKETS

WITH
proved
SEALABILITY

...and the
added extra


Craftsmanship

The Fitzgerald Manufacturing Co.
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keep
him
coming
back

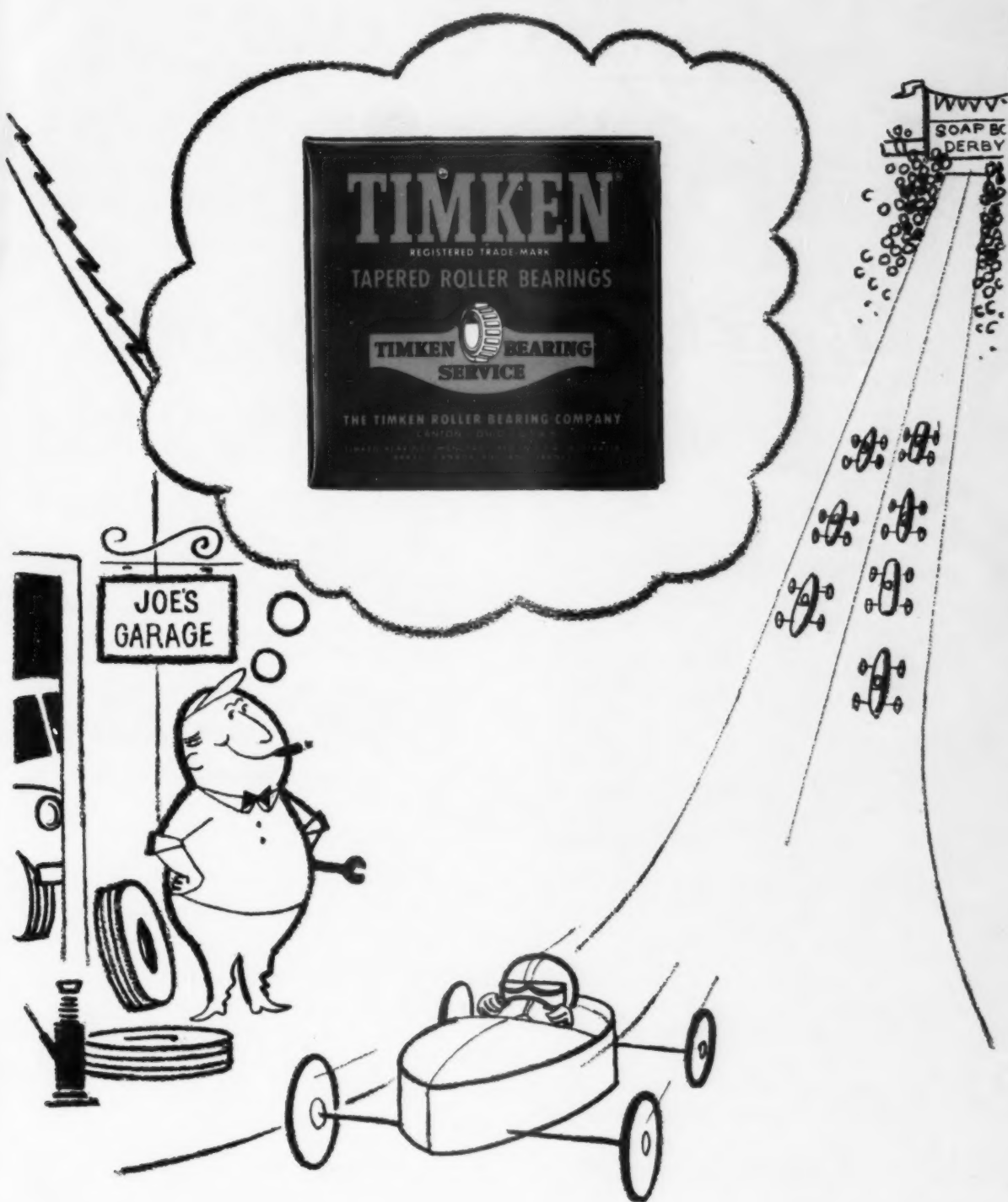
*American
Brakeblok®*



Highest quality keeps him coming back. Inferior goods sell only one time to any customer. American Brakeblok lining is the finest made anywhere. Riveted and bonded exchange are available through your NAPA jobber.

P. O. BOX 21, BIRMINGHAM, MICHIGAN
DIVISION OF AMERICAN BRAKE SHOE CO.

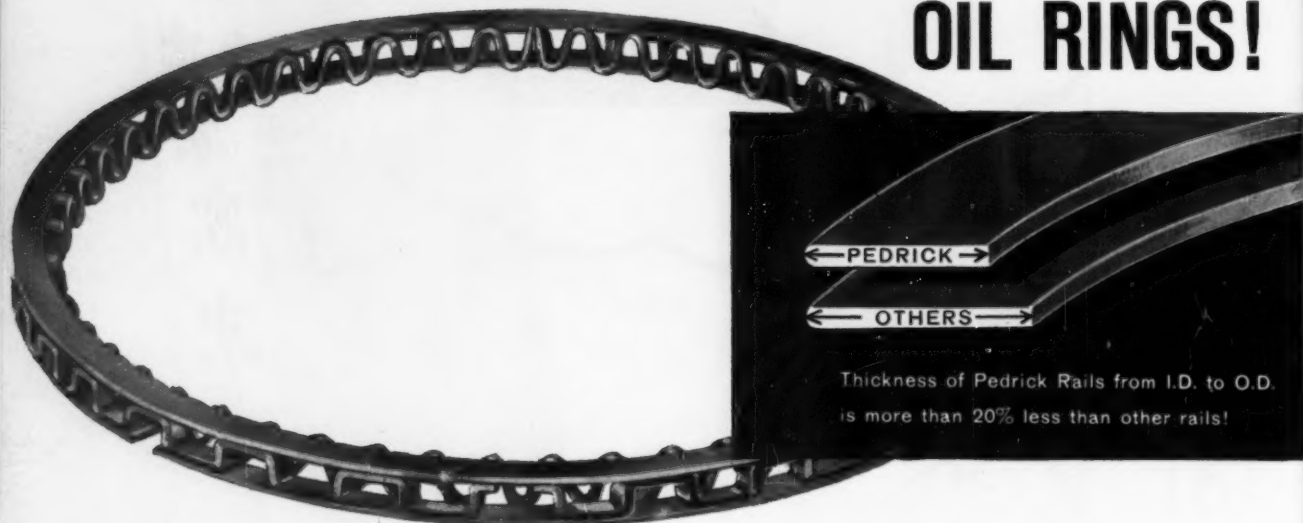
AMERICAN BRAKEBLOK



Your customers come back for the best...so tell 'em
you always use Timken® tapered roller bearings

Double the **CONFORMABILITY**

WITH
Pedrick FORMFLEX CHROME
OIL RINGS!



It is an engineering fact that *20% less radial thickness* delivers *double* the amount of flexibility. And flexibility determines the ability of a piston ring to conform to conditions of cylinder wear and distortion.

Pedrick's distinctive 4-piece construction, in which the "Equalizer" and Spacer are separate pieces, makes it possible to use rails at least 20% less in radial thickness and therefore much more flexible and conformable. Only by using Pedrick Formflex Chrome Rings do you get such exceptional conformability. The results are unequaled overall performance and piston ring life. Ask for them at your favorite jobber.

In addition, PEDRICK FORMFLEX CHROME RINGS are:

- Easy to Install.
- Effective in Side Sealing.
- Effective in Not Plugging.
- All Purpose—for any Kind of Service.
- Chrome-faced for Longer Life.

DEPEND ON

Pedrick

FOR THE BEST RING JOI

WILKENING MANUFACTURING CO., Philadelphia 42, Pa. • In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto

AWDA "Man of the Year" award to Saks, Weber Named President

Ira Saks, Cleveland, Ohio well known industry leader, was acclaimed the Automotive Man of the Year and received the AWDA coveted President's Award during the 13th annual national convention of the Automotive Warehouse Distributors Association.

The setting was a joint luncheon between manufacturers and distributors assembled in the Grand Ballroom of Kansas City's Muehlebach Hotel. Jack Lescoulie, nationally known television personality of the NBC Television Network, made the formal presentation of a trophy.

Mr. Lescoulie read the following citation:

"Presented to Ira Saks on October 31, 1960, as the Automotive Man of the Year in recognition of his statesmanlike effort toward eliminating discriminatory excise taxes."



Robert S. Weber, P. E. Weber, Inc., Milwaukee, newly elected President of AWDA.



N.B.C. television's well known Jack Lescoulie presents the AWDA President's Award to Ira Saks of Cleveland, Ohio, Automotive Man of the Year of 1960. Mr. Saks, left, received award in Kansas City.

It was announced during the meeting that the AWDA President's Award will be given every year to the Automotive Man of the Year. AWDA will advertise for nominations during the late summer of every year and will submit the nominations to the selection committee, which will make a selection in accordance with qualifications established by the AWDA Board of Governors.

Ira Saks cut his teeth in the automotive industry as a piston ring salesman in 1914. Three years later he ventured into the manufacturing of automotive parts as a small stockholder in a small company in Cleveland.

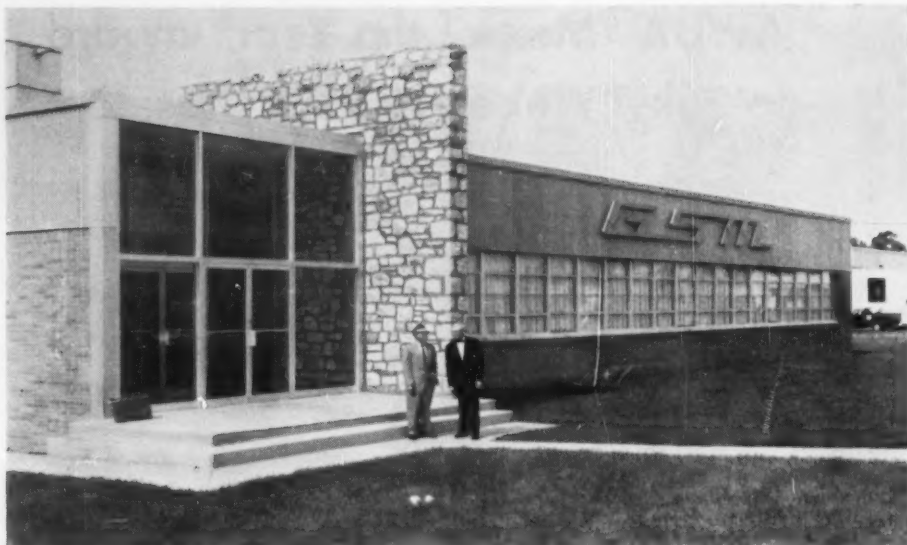
During the 30-year period—1923 through 1953—Saks served three terms on the Board of

Directors of the former National Standard Parts Association, as industry representative on the War Production Board during World War II, as treasurer of the Automotive Service Industry Committee, administering a quarter of a million dollar program in conjunction with the University of Michigan. This program resulted in the publication of a book, "Marketing of Automotive Parts," which even today is the industry's Bible on the various methods of distribution in the automotive industry.

Weber Elected President

During AWDA's 13th annual convention, Robert S. Weber, prominent Milwaukee warehouse

Continued on page VII



President Samuel Rosenberg and Quality Control Consultant, William O'Shaughnessy are dwarfed by the size of the New Garden State Motors building. (O'Shaughnessy is at right).

REBUILT & EXCHANGED Engines at GSM

Starting on a small scale in engine rebuilding, New Jersey businessman quickly had to expand operations to handle growing volume of customers

MR. Rosenberg, owner and president of Garden State Motors, once operated a successful Chrysler dealership in Camden, N.J. He started rebuilding engines on a small scale and quickly ran out of space. In his new plant at Pennsauken, N.J.,

all the latest and most expensive equipment is being used. He believes in quality.

Each man is trained to do a specific operation and he takes great pride in his work. At the present time the plant is tooled up to mass produce Chrysler

product engine overhauls. He is also setting up to rebuild Chevrolet engines and some other popular makes.

Garden State Motors is noted for liberal warranty. All engines are guaranteed like new and it has many satisfied clients.



Engine is getting the once over by Bill O'Shaughnessy of GSM and Jack Montgomery, Technical Editor of MOTOR AGE. (Montgomery is in foreground.)



All valve seats are trued by grinding after new guides and inserts have been installed.



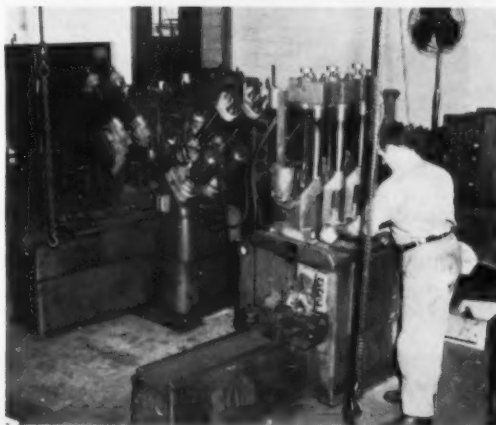
Crankshafts are reclaimed by short arc welding. This operator keeps four crankshaft lathes humming all day long.

Gang boring and honing operations are performed on engine blocks by several machines. Engines then receive new serial numbers.



Above: Six cylinder engine lowered into Dynamometer test stand. Engines are run with oil pan plug removed. Oil is circulated first by separate oil pump for flushing chips out.

Chamfering top of cylinder eliminates a sharp edge that could cause future problems such as detonation caused by sharp corners glowing.



THE

PULSE

OF

AUTOMOTIVE

BUSINESS

Automotive Wholesaler's Sales and Inventories

Data from the Bureau of the Census, Dept. of Commerce

Region	Per Cent Change in				
	Sales		Inventories		
	Sept. 1960 from Sept. 1959	Sept. 1960 from Aug. 1960	9 Mos. 1960 from 9 Mos. 1959	Sept. 1960 from Sept. 1959	Sept. 1960 from Aug. 1960
New England.....	-2	-3	+6	+10	0
Middle Atlantic.....	-7	+2	+3	+8	-1
East North Central.....	-8	-9	+6	+18	+1
West North Central.....	-1	-5	0	0	0
South Atlantic.....	+2	-1	+3	-1	+2
East South Central.....	+4	+2	+2	+14	+2
West South Central.....	-4	-3	-3	+1	+1
Mountain.....	..	+3	-5	0	+1
Pacific.....	-11	-5	+3	+5	+2
United States.....	+8	-1	+9	+12	+1

Monthly Sales of Automotive Jobbers incl., Tire and Tube Wholesalers*

All Data are in Millions of Dollars

Month	1960	1959	Per Cent Change
Jan.....	\$ 374	\$ 352	+ 6.15
Feb.....	363	333	+15.01
Mar.....	418	375	+ 9.87
Apr.....	449	392	+14.54
May.....	443	389	+13.88
June.....	469	429	+ 9.32
July.....	427	419	+ 1.91
Aug.....	472	405	+16.54
Sept.....	467	426	+ 9.11
Oct.....	..	439	..
Nov.....	..	429	..
Dec.....	..	379	..
Total—Year.....	..	\$4,769	..
Total—9 Months.....	\$3,902	\$3,522	+10.79

* Estimated by the Bureau of the Census.

Monthly Sales of Franchised Car Dealers*

All Data are in Millions of Dollars

Month	1960	1959	Per Cent Change
Jan.....	\$ 2,577	\$ 2,531	+ 1.81
Feb.....	2,670	2,450	+ 8.98
Mar.....	3,036	2,921	+ 4.00
Apr.....	3,120	2,492	+25.20
May.....	3,054	3,033	+ 0.69
June.....	3,075	3,198	- 3.85
July.....	2,467	2,903	-15.02
Aug.....	2,815	2,772	+ 5.66
Sept.....	2,314	2,305	+ 0.39
Oct.....	..	2,956	..
Nov.....	..	2,284	..
Dec.....	..	2,177	..
Total—Year.....	..	\$32,472	..
Total—9 Months.....	\$24,930	\$25,055	- 0.50

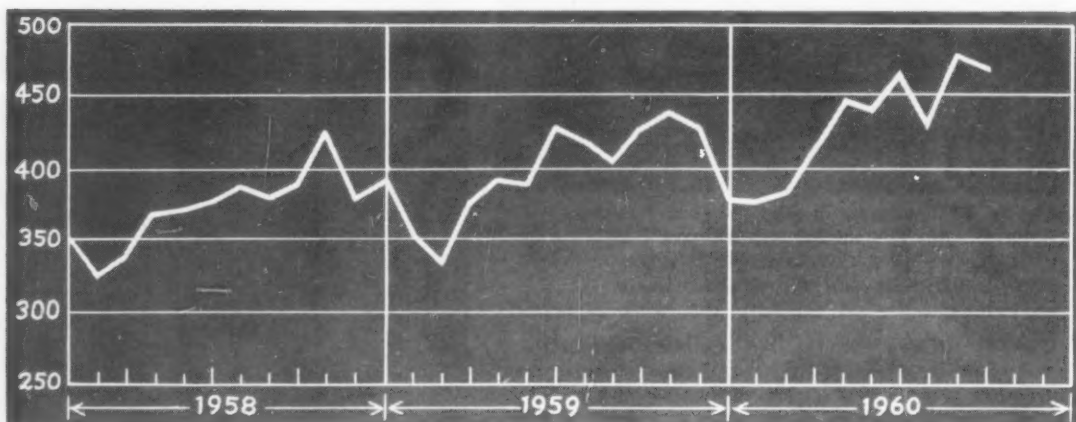
Monthly Sales of Gasoline Service Stations*

All Data are Millions of Dollars

Month	1960	1959	Per Cent Change
Jan.....	\$ 1,356	\$ 1,282	+5.77
Feb.....	1,206	1,197	+0.68
Mar.....	1,398	1,316	+6.85
Apr.....	1,457	1,348	+8.09
May.....	1,489	1,427	+4.34
June.....	1,525	1,450	+5.17
July.....	1,587	1,516	+4.68
Aug.....	1,566	1,504	+4.26
Sept.....	1,476	1,419	+4.16
Oct.....	..	1,462	..
Nov.....	..	1,433	..
Dec.....	..	1,437	..
Total—Year.....	..	\$16,793	..
Total—9 Months.....	\$13,134	\$12,461	+ 5.40

MONTHLY SALES OF AUTOMOTIVE WHOLESALERS— INCLUDING TIRE AND TUBE WHOLESALERS

(All Data in Millions of Dollars)



Bendix Combines Auto Aftermarket Sales Activities

Formation of Bendix Automotive Service, a sales and service organization to consolidate automotive aftermarket activities of nine manufacturing divisions of The Bendix Corporation has been announced.

The new organization "puts under one roof" the entire range of Bendix products for the automotive aftermarket. This includes brakes, power brakes, power steering, brake lining, fuel pumps, carburetors, filters, universal joints, ignition systems, starter drives, radio receivers, two-way radio and other devices and components, totaling several thousand parts, according to Malcolm P. Ferguson, president of the Corporation.

The consolidation is part of a major program to expand Bendix aftermarket sales, Ferguson said.

The Corporation's automotive products, Ferguson explained, have been marketed independently by the various Bendix divisions. Beginning with the Bendix starter drive and four-wheel braking systems, the product list has become widely diversified and extended to several divisions of the company which have found automotive applications for their products.

Ferguson also announced the appointment of T. A. Kreuser, formerly manager of service sales for the Bendix Products division, South Bend, Ind., as manager of Bendix Automotive Service. Kreuser, a veteran Bendix executive who has long been active in the automotive service industry, will continue to make his headquarters in South Bend.

Merging of Bendix's automotive product lines under the new sales and service organization, which will be handled on a gradual basis starting early in 1961, will affect the following divisions: Bendix Products, South Bend, Ind.; Zenith Carburetor and Bendix Filter, Detroit; Eclipse Machine, Elmira, N.Y.; Lakeshore, St. Joseph, Mich.; Marshall-Eclipse, Troy, N.Y.; Scintilla, Sidney, N.Y.; Bendix Radio, Baltimore (Towson), Md.; and Red Bank, Eatontown, N.J.



Thurlow "Bud" Sennholtz (right), President of Zion Auto Parts, Inc., Zion, Ill., displays a winner's smile as he receives his check covering expenses for a round-trip fare for two to A.S.I.A.'s 1961 Los Angeles Convention from J. L. Wiggins (left), acting Executive Secretary of the Association. The check represents the award for submitting the prize-winning slogan "Design for Dividends" for the 1961 Convention.

Black & Decker Posts Sales Record

The Black and Decker Manufacturing Company closed its 50th anniversary year on September 30, 1960 with an all-time high record in consolidated net sales. In their annual report to Black & Decker stockholders, released recently Robert D. Black, Chairman of the Board, and Alonzo G. Decker, Jr., President of the international power tool firm, stated consolidated net sales for the company and its 14 subsidiaries totalled \$60,775,303 in fiscal 1960. This was an increase of 15.2 per cent over the 1959 consolidated net sales.

Consolidated net earnings for the year were \$5,488,039, an increase of 14.4 per cent over 1959.



Gene O. Hartnett, above, has been named Silencer Product Manager according to an announcement by Wayne E. Rapp, Vice President in charge of Wholesale Sales, Walker Manufacturing Company.



More than 250 dealers were attracted to eight meetings jointly sponsored by the Maremont Muffler Division, Monroe Auto Parts Equipment Company and Service Parts, Inc. Automotive parts wholesalers in southwestern Idaho and eastern Oregon. Pictured above is a portion of dealers attending Boise meeting.



New Chrysler Corporation Program for nationwide production and distribution of remanufactured automobile and truck parts got underway officially as agreement was signed with Kenco, Inc., Warren, Mich., one of five companies that will produce a complete line of remanufactured parts for all motor vehicles. Left to right are J. W. Caskey, executive vice president of Kenco, Inc., W. F. Butlin, Kenco sales manager; T. E. Waterfall, director of sales for Chrysler Corporation's Service Parts and Accessories (MoPar) Division; R. F. Ackerman, manager, product planning and development, MoPar Division, and K. B. Brown, president of Kenco, Inc.



Robert J. Barton, above, of Findley, Ohio, has been named public relations manager of The AP Parts Corporation. Al Joseph, director of advertising and public relations made the announcement.

Brady Company to Handle Blackhawk Advertising

The Brady Company, Milwaukee and Appleton, Wisconsin advertising agency, has been appointed by the Blackhawk Auto-

motive Division, Milwaukee, as its new agency. Announcement was made by Winston C. Williams, Blackhawk Automotive's marketing service manager.

In addition to handling Blackhawk Automotive's advertising program, Brady will offer overall marketing counseling and assistance in the development and preparation of merchandising and public relations materials.

A.S.I.A. Regional Meetings

Industry problems of manufacturers were discussed recently at Automotive Service Industry Association regional meetings in Detroit, Cleveland and New York City. One of the timely topics, in view of the upcoming I.A.S.I. Show presented by the Pacific Automotive Show in Los Angeles in February, 1961, was "How To Get the Most Out of Trade Shows."

Jack L. Wiggins, A.S.I.A. executive secretary, moderated the discussions.

Wisconsin Wholesalers

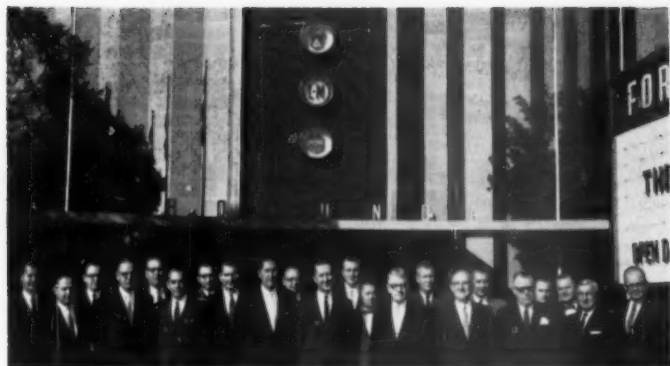
The Wisconsin Automotive Wholesalers Association will hold their charter meeting starting at 9:00 a.m., Wednesday, January 11, 1961. Place will be the Hotel Retlaw in Fond du lac, Wis., according to an announcement by David I. Gordon of Gordon Auto Parts, Inc., Racine, Wisconsin, who is a member of the Board of Directors of W.A.W.A.



Newark Service Station employee Frank J. Argenziano, who has never before been a winner in any contest, smiles as he receives keys to new Studebaker Lark Sedan he won in \$142,000 Purolator Prizarama contest. Presenting keys is James D. Abeles, President of Purolator Products, Inc. Mr. Argenziano works at Lyons Cities Service, Newark.



A. Campbell, Jr., above, has been promoted to Manager of Sales and Marketing Services for the Thermoid Division of H. K. Porter Company, Inc., it was announced by G. P. Robers, General Sales Manager for Thermoid.



Ten regional representatives comprising the National Motorcraft Distributor Council recently held their first annual meeting with sales management personnel of the Ford Division, Ford Motor Company, in Dearborn, Mich. The Council represented some 50 Motorcraft distributors who make available Ford carburetor, ignition and electrical replacement parts in areas not covered by Ford dealers. The Motorcraft parts are distributed through central warehouses and their associated national wholesale parts network. Shown along with Ford Division personnel in front of the Ford Rotunda are Motorcraft distributors from New York, Pennsylvania, Texas, California, and Washington.

President Weber...

Continued from page 1

distributor, was elected to become AWDA's 8th president.

At the age of 33, Bob Weber probably becomes one of the youngest presidents of any national association in the country.

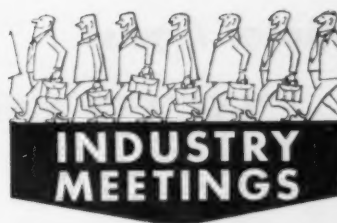
Reared in Milwaukee, Weber obtained his degree of Bachelor of Philosophy and his Doctor of Law degree at the University of Chicago.

In addition to his duties as the general manager of Milwaukee's oldest warehouse distributor, P. E. Weber, Inc., Mr. Weber also is a member of the law firm of Goldenberg and McKay of Milwaukee, and executive vice-president of Badger Outerwear Manufacturing Company in Port Washington, Wisconsin.

Mr. Weber's professional and civic activities are many. They include membership in the American Bar Association and its anti-trust section, the Wisconsin Bar Association, and the Milwaukee Bar Association.



Sylvia DeVan, "Miss Anti-Freeze of 1960," reminds skiers and motorists that the Du Pont Company will again cooperate with the National Ski Patrol System this winter in an unusual gesture of goodwill. The Patrol will place slotted-top Du Pont "Telar" anti-freeze and summer coolant cans at collection points on and near 50 major ski slopes for voluntary contributions from skiers. The funds will support a widespread educational campaign planned by the Patrol to warn the skiing public of the dangers of snowslides.



Jan. 9-13—Society of Automotive Engineers international exposition, Cobo Hall, Detroit.

Jan. 28-Feb. 1—National Automobile Dealers Association annual convention, Civic Center, San Francisco.

Jan. 30-Feb. 2—Automotive Accessories Manufacturers of America exposition, Coliseum, New York City.

Feb. 6-8—Canadian Automotive Wholesalers & Manufacturers Association convention, Palliser Hotel, Calgary, Alta., Canada.

Feb. 13-14—Automotive Booster Clubs, International annual meeting, Statler-Hilton Hotel, Los Angeles, Calif.

Feb. 14—General Membership Meeting, Automotive Affiliated Representatives, Biltmore Hotel, Los Angeles, Calif.

Feb. 14-15—Automotive Service Industry Association national convention, Biltmore Hotel, Los Angeles, Calif.

Feb. 16-19—Pacific Automotive Show presents ASI Show, Sports Arena, Los Angeles Memorial Coliseum, Los Angeles, Calif.

Feb. 18-26—Chicago Auto Show, Chicago Exposition Center, Chicago.

Feb. 22-26—11th Annual National Autorama, Connecticut State Armory, Hartford, Conn.

March 13-14—Louisiana Automobile Dealers Association, Roosevelt Hotel, New Orleans.

May 11-13—Pennsylvania Automobile Association, Hilton Hotel, Pittsburgh, Pa.

Motor Age's

WHO'S WHO



Les A. Thayer was elected vice president - sales of the Belden Manufacturing Company. He is currently president of the Automotive Service Industry Association.



Douglas Mueller, assistant to the president of Seiberling Rubber Co., has been named director of merchandising and public relations for the company.

A. S. "Al" Alton has been appointed general sales manager for the Allen Electric & Equipment Co.

Bill Carlton and his two sons will handle DL Products, Inc., sales in Georgia and Florida. **"Red" Park** and **Bill Rosengren** will represent DL in Mississippi, Alabama and Tennessee.

Appointment of **W. C. Henderson** as manager, utility sales, and of **A. W. Leighton** as manager, industrial sales, Los Angeles district, has been announced by Allis-Chambers Industries Group.



Leo P. Cusick has been promoted to the position of sales manager, jobber and distributor sales, for the automotive division of Rubbermaid, Incorporated.

Joseph W. Greenen has been named general manager of the World Bestos Division of The Firestone Tire & Rubber Company.

Paul D. Graham has been named bearings sales promotion manager—Eastern for New Departure and Hyatt Bearings of United Motors Service. **Norman A. Hill** will assume a similar position for the Western region.

A. A. (Tony) Feldman has been named staff assistant to the director of replacement sales division of The Electric Autolite Co. **Ralph A. Vinciguerra** has been appointed manager, national account sales for the division.

M. W. Piehl has been appointed sales manager of the marketing division of the Alemite Division of Stewart-Warner Corporation.

Edward W. Hufnagle has been appointed manager of automotive sales for the glass division of Pittsburgh Plate Glass Company.

A. Donald Wagen has been appointed manager for the Houston Paint Division of Pittsburgh Plate Glass Co.

V. E. Gillespie has been appointed new manager of the Automotive Chemical Sales Department of the Wilco Company.

Walter B. Fitzgerald has been appointed to the position of Western field sales manager with the R. E. Dietz Company.



Ronald F. Dusenbery has been appointed assistant sales manager of the replacement division of Muskegon Piston Ring Company. He will make his headquarters at Muskegon.

T. Beverley Keim has been named advertising director for the Wynn Oil Company.

George C. Matteson, Jr. has been appointed to the newly created position of marketing manager for the automotive wholesale division of Walker Manufacturing Co.

Gus Treffeisen has been appointed manager of marketing of the Alemite and Instrument Division of Stewart-Warner Corporation.

Dr. E. P. Steff has been appointed assistant general manager of U.S. Asbestos—Grey-Rock Division of Raybestos-Manhattan, Inc.



Donald Burnett has been appointed division manager for the Memphis territory (Arkansas, and parts of Mississippi, Oklahoma, Tennessee, Missouri and Texas) for automotive equipment sales for Van Norman Machine Co., a division of Van Norman Industries, Inc.



Marc G. Lookabaugh of Spokane, Wash., has been appointed a territory manager of The AP Parts Corporation. His territory includes Idaho, Montana and Eastern Washington and Oregon.

MOTOR AGE

newscoop

De Soto Discontinued
AMC Optimistic
Chevy Leading Ford
Planned Obsolescence
Anti-Smog Devices
Olds F-85 Production Up
Lighter-Than-Aluminum Eng.

In the days ahead HERE'S WHAT TO LOOK FOR !!!

(Items gathered and edited by Ed Janicki, Bill Montgomery and Neil Regeimbal)

What's In Store For The Future?

THERE'LL BE BROAD CHANGES IN STORE for country resulting from change from Republican Eisenhower Administration to a new Democratic Administration under John F. Kennedy.... But changes probably won't be as drastic as new President would like.... Many of his proposals will be watered down in Congress.... Here's outlook for some major issues:



Taxes will be "reformed," but there is no chance of any broad business cuts.... Some lower-income taxpayers and small firms may get help.... Highway construction program will continue without a speedup.... Temporary 1-cent gasoline tax may be continued.... Prosecution of firms for antitrust or fair competition violations will be stepped up.... Wage-hour law will be extended and minimum raised a little, with many dealers loosing their exemption.... "Consumer protection" laws will be passed, including probably credit fee disclosure proposal.... Money and credit will be eased.

De Soto Discontinued

DE SOTO HAS BEEN DISCONTINUED.... Chrysler Corp. announced that all owners of 1961 De Sotos will be entitled to a \$300 rebate on purchase of any other 1961 Chrysler product.... With De Soto out of picture, division now reverts back to being known as Plymouth Division.

Since January, medium-priced class has suffered a 13.1 per cent decline in sales.... By contrast, De Soto plummeted 50 per cent during same period.... It was third consecutive year in which De Soto sales suffered a setback.

Rise In State Income From Vehicle License Fees

STATE INCOME FROM VEHICLE LICENSE FEES continues rise sharply.... License and title receipts rose 5.4 per cent to \$1.4 billion this year.... This is about \$70 million above 1959.... More than double what they produced in 1950.... These fees, according to U.S. Census Bureau, now represent a little more than 8 per cent of all state income.... They amount to \$8.25 per person.

American Motors Optimistic

ONSLAUGHT OF NEW COMPACT CARS does not dampen optimism of American Motors' officials.... Roy Abernathy, AMC vice president of automotive distribution and marketing, predicted: that AMC would sell 550,000 Ramblers during the 1961 model year.... This would be 26 per cent over this year.... Also that Rambler's share of market will climb to 10 per cent from the current 8 per cent.... He also predicted that AMC's new American convertible, will take 10 per cent of AMC's production.

More Funds Available For Loans

FRESH FUNDS FOR BUSINESS LOANS are becoming available.... Even more are in prospect.... Recent credit-easing actions of Federal Reserve Board started flow.... Board now permits member banks to include vault and till cash as reserves for lending purposes.... This will amount to about \$2.1 billion.... New Kennedy Administration intends quickly to try to further loosen credit for business.... Also lower interest rates.



Number of New Car Models Confuse Public

PROFUSION OF 1961 MODELS is confusing public.... General Motors, for example, now offers 119 different models.... Result is many prospects are holding back purchases.... Higher prices on new crop of compacts are making many think twice—looking to see where best buy lies.

Present situation compounded by record 1960 model inventories.... Every time a dealer sells a 1960 model he kills a 1961 model sale.... For dealers, there's strong competition in the days to come.... Everyone is selling in almost the same price class.

Despite all this, sales got off to a good start.... Although initial sales have been spotty, many companies reported setting new records.... Industry-wise, October sales were the best for that month in history.... Upward drift is expected as buyers start making up their minds as to which of the myriad of models fit their needs.

Business Potential For Service Grows

BUSINESS POTENTIAL FOR SERVICE, repairs, continues to grow.... Number of motor vehicles on U.S. highways will hit 73,868,000 by end of year.... A 3.3 per cent jump from 1959, U.S. Commerce Department reports.... Passenger car registrations alone will total more than 61.5 million.

Chevy Leading Ford By 255,000 New Cars

CHEVROLET CONTINUES TO MOVE AHEAD of Ford by a comfortable margin.... Nine-month R. L. Polk figures show Chevy leading rival by about 255,000 units.... Last year during same period both were within an eyelash of each other.

Chevy's total share of the market has edged up by 1-1/2 per cent to 26.2 per cent.... Meanwhile, Ford's share has slipped from 23.8 per cent last year to 21.0 per cent.... Biggest gainer in market penetration for the nine-month period was Dodge.... Its share more than doubled from 2.3 per cent to 5.6 per cent, with most credit going to Dart.

No Great Style Change Planned For Compacts

STYLISTS HAVE HARDLY PUT A FINGER to the 1961 Corvair, Falcon and Valiant.... For second straight year they look alike.... Only minor changes are noticeable.... Mostly in grillework and other exterior ornamentalations.... When is the next change due?

For the above three, not for another year.... 1962 models will bear a strong resemblance to the 1961's.... A three-year body cycle was decided for those three sometime ago.... Companies figured a three-year period was needed to really test market for compacts.... How sales go within that period will determine to what extent compacts should be restyled.

GM's Tempest, Special and F-85 reportedly are on a two-year cycle.... So next year's models will not undergo many changes.

Warranty Period Being Extended On Lincoln Continental

LINCOLN-MERCURY DIVISION went one step better last month.... It announced that warranty period on 1961 Lincoln Continental is being extended to two years or 24,000 miles, whichever comes first.... It was a shocker to all other companies, which earlier switched from 90-day-or-3000-mile warranty to a 12-month-or-12,000-mile warranty.

L-M's action underscores confidence that company has in quality and reliability of 1961 Lincoln Continental.... Similar to other extended warranties, the Continental warranty covers free replacement and labor of any part with a defect in workmanship or materials.... It does not cover normal maintenance items such as filters, spark plugs, ignition points, wiper blades, and the like.

Views On "Planned Obsolescence"

MUCH HAS BEEN SAID OVER THE YEARS about "planned obsolescence" in the automotive industry.... High annual depreciation of automobiles has been under constant criticism.

Does it benefit anyone to limit model changes to every three or five years rather than every year? Volkswagen has done it and stayed in business.... Should U.S. auto makers do the same? Would abandoning the annual model change bring lower prices?

To all this, GM's President John Gordon supplied this answer recently: If manufacturers did not change models each year, 20 million new car buyers who come to the market every three years might well buy once in six years.... Annual sales would be cut in half if there was nothing new to offer.... It would cost more to produce a car with volume reduced.



Anti-Smog Devices To Be Tested

AIR FORCE WILL CONDUCT A SIZEABLE TEST of anti-smog devices—but only as a byproduct in the search for fuel economy for its ground vehicles.... Service, after a preliminary test, is buying 2000 "blowby" devices for testing the fuel savings from reburning crankcase gases.

Since completeness of combustion is a major factor in smog control, it'll also add some figures to the studies of this problem already underway.

Olds' F-85 Gets Off To Fast Start

OF THREE NEW COMPACTS, Olds' F-85 gets off to fastest start.... Through mid-November division turned out more than 23,300 units.... Trailing on its heels was Buick Special, with an output of 20,900 units.... Pontiac Tempest got off to slow start.... Only 10,700 units were turned out through mid-November.... It should be pointed out, however, that Tempest was last of the three to get into volume production.

Overall, compacts continued to set the pace.... Lincoln-Mercury Division produced more Comets than Mercury models (last count: 175,100 Comets vs 141,600 Mercs).... Standard-size Plymouth was feeling the bite of Valiant.... Chrysler turned out 213,300 Valiants vs 224,600 Plymouths through November 12.

However, sales picture reversed itself a bit.... For first time, compacts failed to increase their share of the total market in September.... It's by no means a setback for compacts.... Prospects obviously have held back purchases until they could get a look-see at all 1961 offerings.

Lighter-Than-Aluminum Engines Being Developed

ARE LIGHTER-THAN-ALUMINUM ENGINES on the way? Maybe not for a long time.... But there's interesting development work being carried out now.... Its on powerplants made of new, lighter metals.

One metal being experimented with is stainless steel.... Industry has applied stainless steel to truck and passenger car bodies.... Now it's looking at possibilities under the hood.... One company deeply involved in such a program is Tyce Engineering Corp. of Chula Vista, Calif.

Tyce recently exhibited a four-cylinder engine with stainless steel block at a meeting of American Society of Body Engineers in Detroit.... It weighed about half that of the aluminum V-8 now offered on compact passenger cars.... Tyce engine delivers up to one horsepower per pound. Stainless used in the Tyce engine is only fifty one-thousandths of an inch thick.... Compared with three-sixteenths of an inch in cast-iron.

Rayon Tires Used On Most '61 Cars

NYLON TIRES AGAIN FAILED to gain a toehold in original equipment market.... They're expected to make some headway next year.... Rayon tires are appearing on most 1961 models.... Buyers can get nylon.... But at extra cost only.

However, there are reports that 1962 compact cars may have two-ply tires made with nylon.... They'll be cheaper.

Inadequate Traffic Safety Programs

FEDERAL INTERVENTION IN TRAFFIC SAFETY ACTIVITIES OF states is a possibility, FBI Chief J. Edgar Hoover warns.... Nation's top G-man says that lack of local interest has "brought on considerable talk" of Federal intervention.

Inadequate traffic safety programs and "public indifference to enforcement of existing traffic laws and the need for stricter regulations" is one of the major drawbacks to improvements on the local level, he says.



LET'S LIVE IT UP

❑ People are committing suicide on the highway. You didn't cause it, but you must help cure it. As a prelude to what's to come in MOTOR AGE, here's the Auto Industries Highway Safety Committee's "Holiday Safe Driving Letter." It is being sent to all members of the National Automobile Dealers Association and the National Tire Dealers and Retreaders Association as a nationwide traffic safety activity. Read, it, ask your employees to read it, and then, send it to all of your customers. It goes as follows:

Dear Friend:

Season's Greetings to you and your family.

In extending our best wishes for your happiness in the New Year, may we take this opportunity to urge you to join with us in a "drive for a safe holiday."

We hope you will bring the following safe holiday tips to the attention of your family and motoring friends. If enough of us follow these suggestions we will help assure a happier and safer season for all.

Be alert to holiday hazards. Drive in keeping with road, weather and traffic conditions.

Watch out for others. Make allowances for unpredictable driver and pedestrian actions. Most holiday accidents involve drinking and speed too fast for conditions.

Plan safe drive. Allow plenty of time for your holiday travel. On long trips make frequent stops. Arrive relaxed.

Be sure your car is safe. Drive with good tires...properly adjusted brakes...lights and turn signals working...windshield wipers and defrosters functioning properly.

Use courtesy abundantly. It pays. "Make courtesy your code of the road" your holiday resolution.

❑ Full enjoyment of the holiday season is something to which all of us look forward. With this enjoyment goes the individual responsibility to protect your family, yourself and your community. Let's all drive for a safe holiday. ❑ Use this, and to all, "May peace be in thy walls and abundance within thy house."

Faithfully yours,

Frank P. Tighe



Manual of GOOD SHOPKEEPING

All phases of Good Shopkeeping are covered in this informative article to help you in your decision to either fix-up or rebuild completely

Service department has five gas fired heaters. Five car hoists speed servicing. Along each wall there is room for 19 car stalls. (Stran-Steel Building)

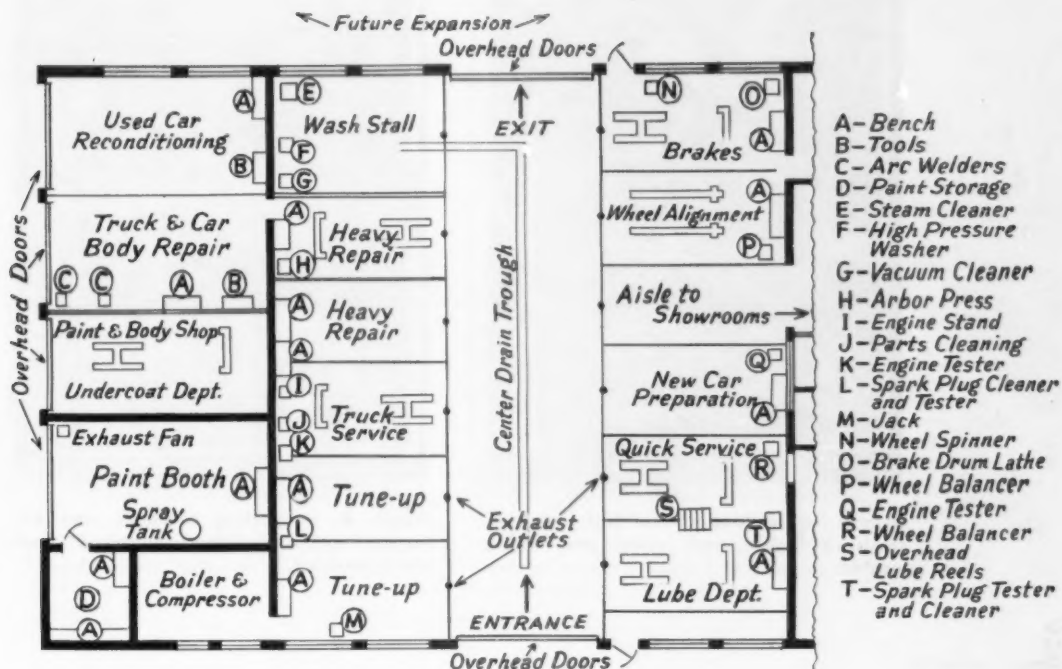


GOOD SHOPKEEPING is a "must" for progressive and alert service departments, garages, and service stations.

An establishment that is clean and orderly creates a favorable appearance to customers. In this article we hope to cover in detail good shopkeeping techniques. Many floor plans are shown. Take a good look at them. They should help you to clarify in your own mind what might be done in your own location.

Start out by taking a good look at your establishment. Does the building attract attention? Is it showing signs of neglect? Is a good cleaning-up of work stalls needed?

A good housecleaning serves to prevent fire and explosion damage. Make a check of every-



Above is an excellent floor plan giving arrangement of tools and equipment in each department.

By William M. Montgomery, News Editor

thing in the building. List the things that need to be fixed, repaired, or cleaned.

Sometimes outside help will be needed to assist in the clean-up campaign. If so, get estimates on the time and materials.

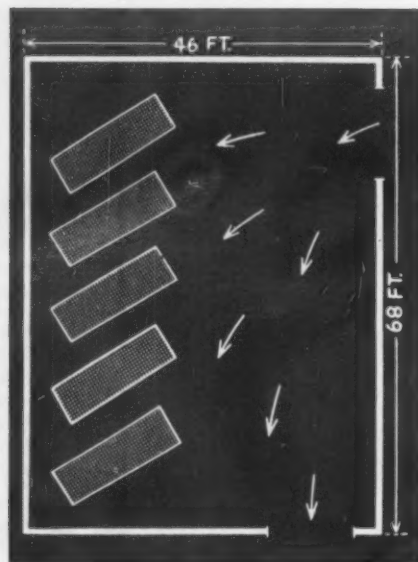
Check all stairs and passageways for loose railings, steps, grease and other unsafe conditions. All accumulated combustible rubbish and trash should be cleaned out immediately. To prevent fires be sure that "No Smoking" signs are placed around the shop.

Look for loose wiring and unsafe tools and equipment. Be sure that tools and equipment are arranged properly for greatest operating efficiency. See that each department is un-

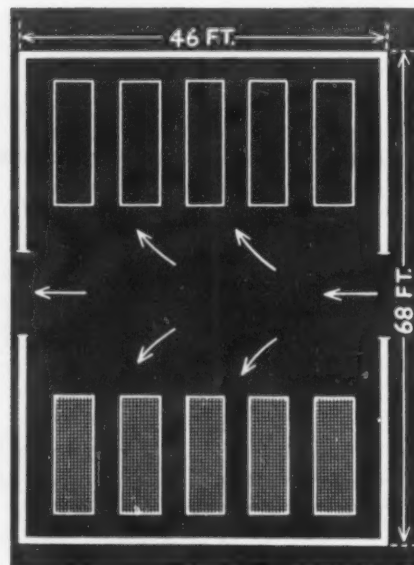
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Dealership building has a 100-ft. clear-span rigid frame which provides unobstructed area for parts and service operations. Walls are of interlocking panel-wall construction, plus masonry and glass. (Armco Steel Buildings)

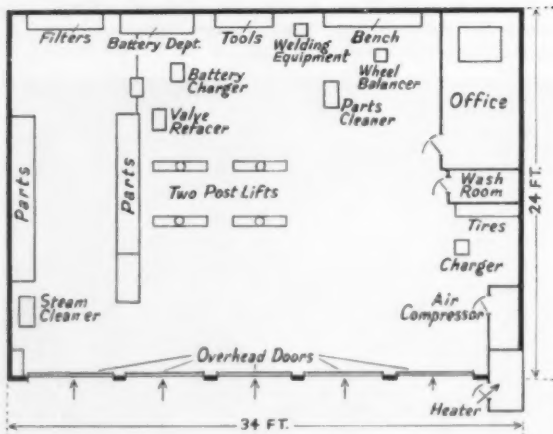




Before: Service department had five work stalls. Valuable work space was being wasted.



After: By relocating entrance and exit across from each other number of work stalls doubled.



Repair shop has four work bays. Another bay is for storage and holds steam cleaner. It has three full time employees.

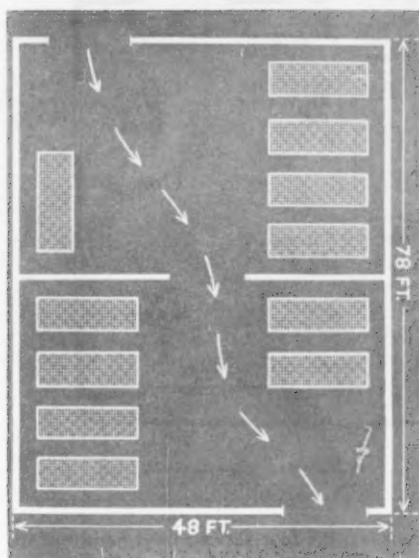
cluttered and uncongested. Assure yourself that safety equipment such as goggles, shields, metal automobile stands and other safeguards are available and being used properly.

Take a look at all electrical equipment. Make sure that they are operating properly. Be sure that your employees know you are interested in their safety. You can prove that by the regular maintenance of good housekeeping principles.

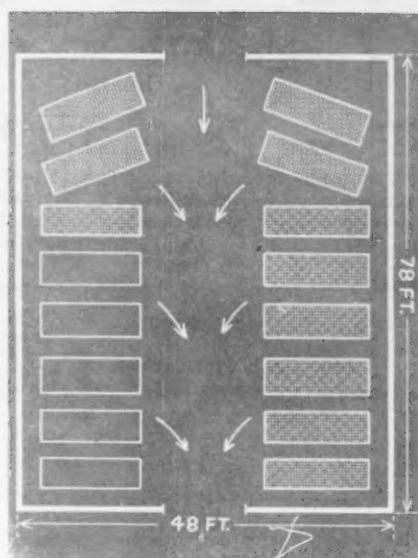
The best way to get all the things done that you have listed is to set a work schedule to cover all the jobs. The building's exterior should be painted or refinished. Repair faulty doors or windows. Clean and repair all sidewalks adjacent to the building.

Replace old lighting fixtures. Clean and check lights regularly to provide maximum lighting for all departments. According to some lighting authorities the best lighting installation will lose more than a third of the light it should provide after a year of operation. A fluorescent tube, for example, dims by nearly 10 per cent in its first 600 hours of operation, less than two months in most dealers' operations. Much of the light is ob-

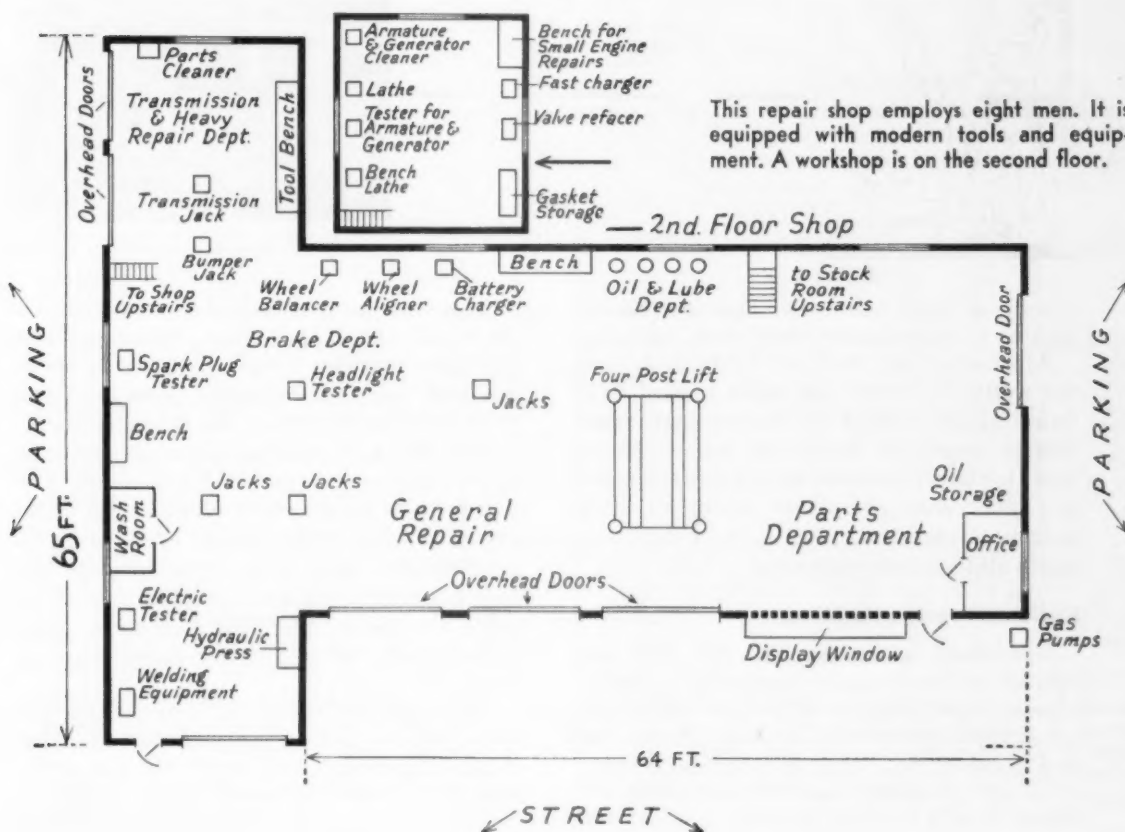
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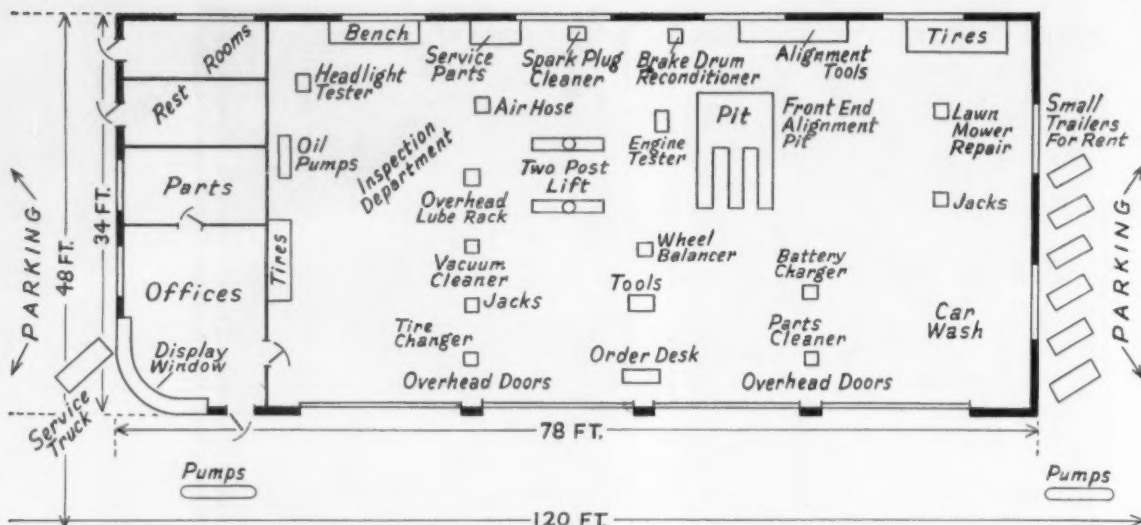


Before: Building was divided by center wall. Only eleven cars could be parked in the building.



After: By removing center wall and re-locating entrance and exit shop can now hold sixteen cars.





This successful service repair station employs nine mechanics and helpers. It's four service bays handle state inspections, tune-ups, lubes, major and minor repairs of cars and trucks. Also wheel balancing and alignment work. Additional profits come from it's small engine repairs and rental of car trailers. (Photo of station is shown below.)



scured by dirt and accumulation, thereby making it important to clean them regularly.

After checking over the lights, look over the walls. Paint the side walls a good light reflecting color. Paint the floor or apply fresh surface treatment. Stripe the floor at 90 degrees to the center aisle. Repair work benches and other shop equipment. Paint all work benches throughout the shop. Clean and polish all tools and equipment.

Evaluate Present Buildings

Somewhere along the line you will ask yourself if your business location calls for expansion, rebuilding, or relocation. If the decision is to build a new building, choose the best possible site. The potential of present and future business must be thoroughly explored. Traffic flow is a big item.

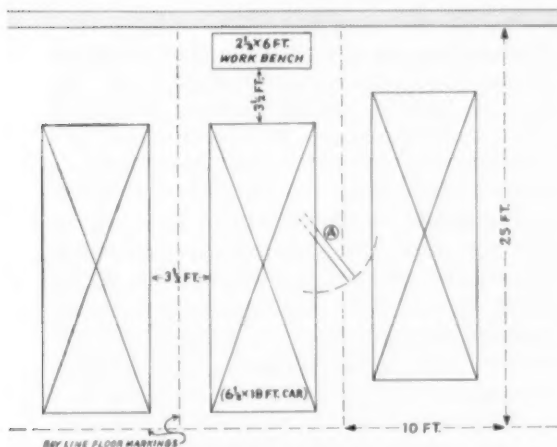
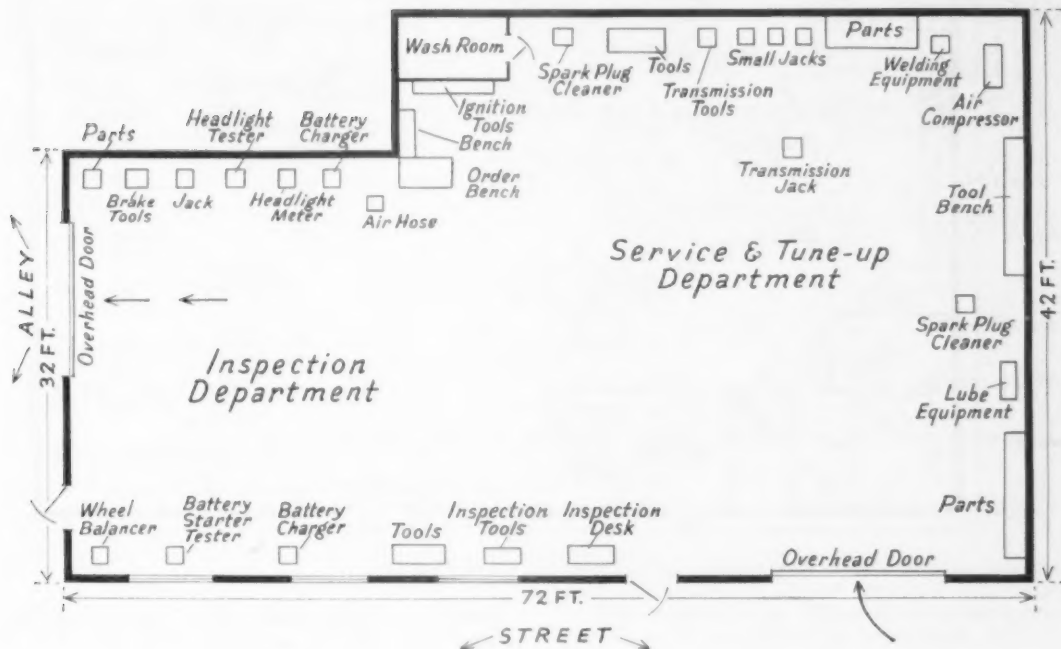
Also whether it is near freeways, expressways and shopping centers. When the site is chosen consider elevations, building specifications, and cost estimates. Also local and state building regulations must be checked.

The choice of building materials and type of construction is another big decision. You will have to decide on whether to use metal prefabrication, cinder block, brick or stone construction. Take time to investigate the new building techniques now being used in today's modern buildings. Remember your building will be around for many years to come.

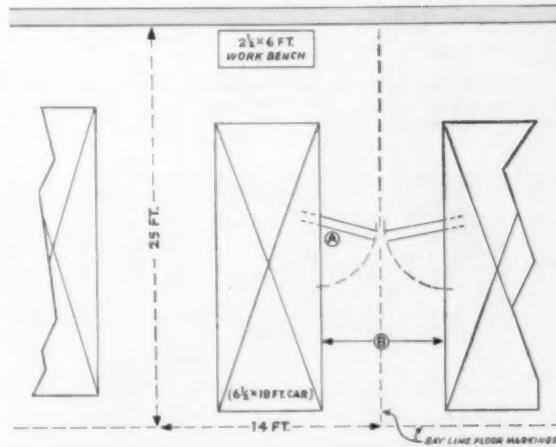
What are the trends in construction for shops, dealerships and service stations? One change is toward prefabrication. The basic criteria for automotive building design is

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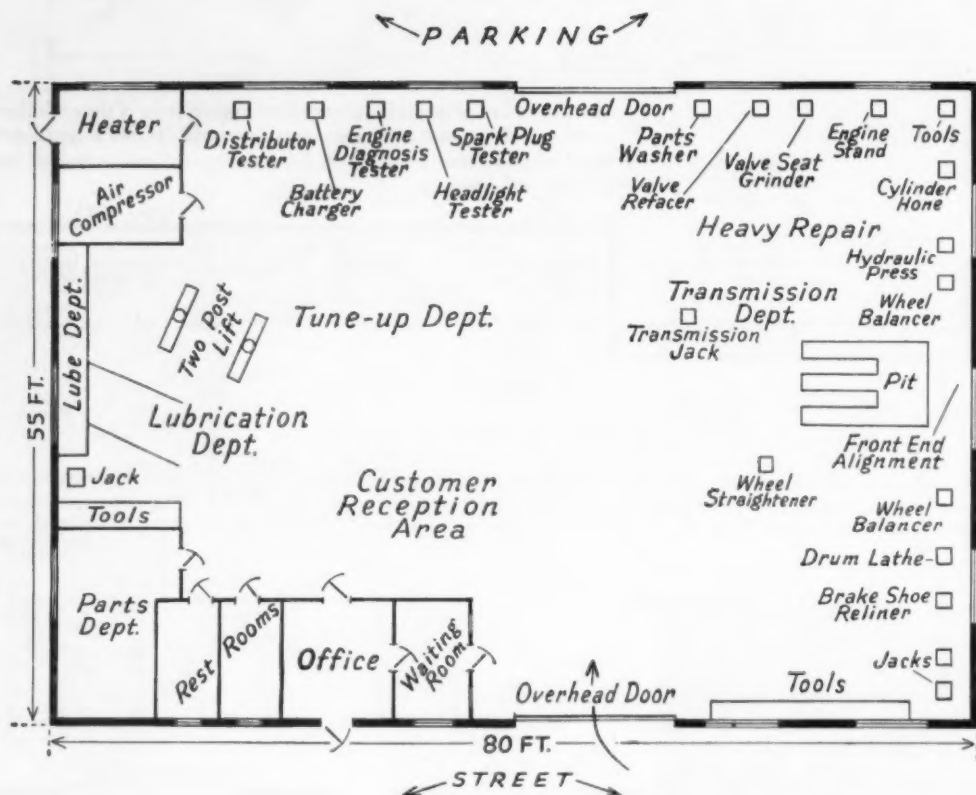
The floor plan of a small independent repair shop is shown below. Two overhead doors make for easy entry and exit. It has a good arrangement of tools and equipment. Two mechanics and a helper are employed full-time.



GENERAL PURPOSE BAY: (A) Doors on 2-dr. sedans need only to be opened to 1st catch, as shown. Off center parking permits full opening. Twenty ft. 2-way traffic aisle will accommodate right angled bays on both sides of shop.



SPECIAL PURPOSE BAYS: For average 1957-60 car the 14 x 25 ft. bay may be used, as shown. (A) Doors open fully on both cars, side by side. (B) Seven ft. between vehicles allows for equipment and functions desired for greatest space utility.



Here is an independent repair shop layout that handles all types of car repair work. It has a front end alignment pit and a two post lift. Entrance and exit are located opposite each other.



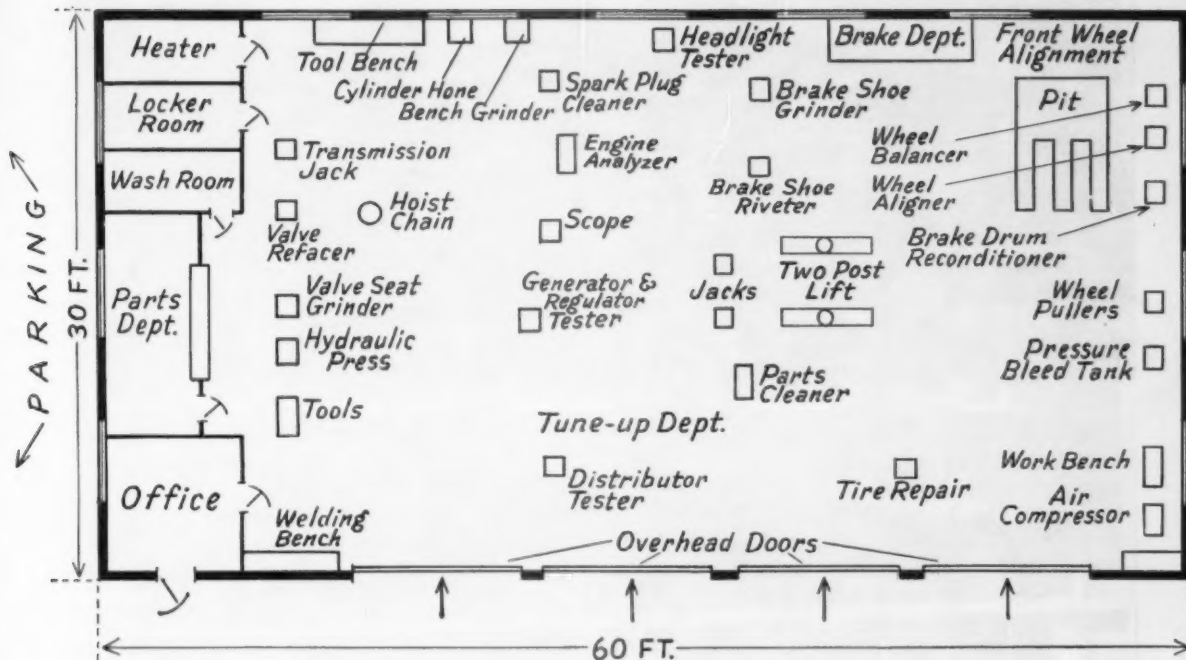
cost, products and services, public opinion, competition and changes in the design of cars. Cost, however, is regarded as the first problem. Holding the line on cost seems to lie in the field of prefabrication or unitized construction. Prefabrication is a matter of minimizing on-the-job costs and placing the costs of fabrication in a plant where volume, auto-

mation, logistics of supply and production can be co-ordinated to better control costs. Before the building can be constructed existing costs and regulations for fire hazards and community construction regulations must be studied thoroughly.

The profitable dealership, shop or service stations should be strategically situated to attract the greatest possible number of patrons. It should be designed to give an immediate impression of modernity and efficiency. The building should also be built around a sound estimate of potential work.

Care must be exercised in the development of each facility design. This is necessary to provide for functional internal management control, work flow, traffic flow, materials handling, storage and display.

Initially only a portion of the total planned facility should be constructed. Provision



This four bay repair shop does a volume business. Tools and equipment are well arranged and located to give maximum work efficiency. Shop has a well stocked parts department of fast moving parts.

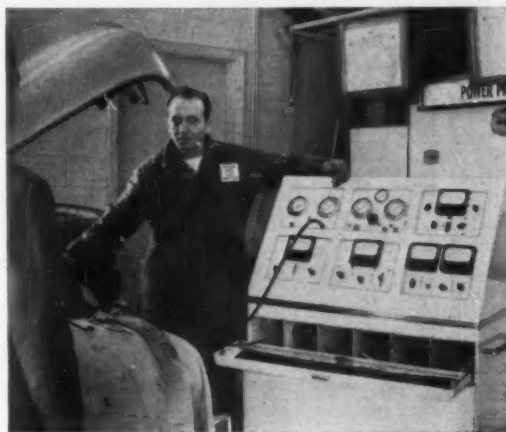
should be for space expansion at a later date when increased business dictates such action. This is especially true of service space.

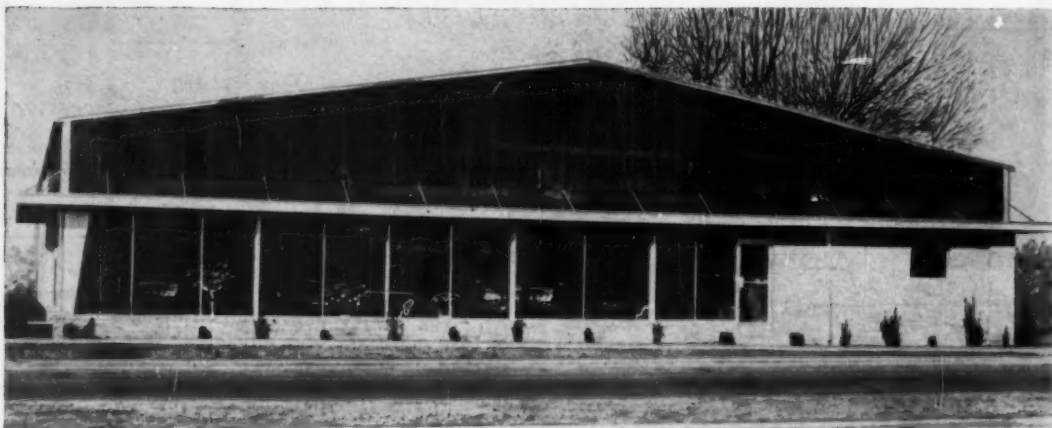
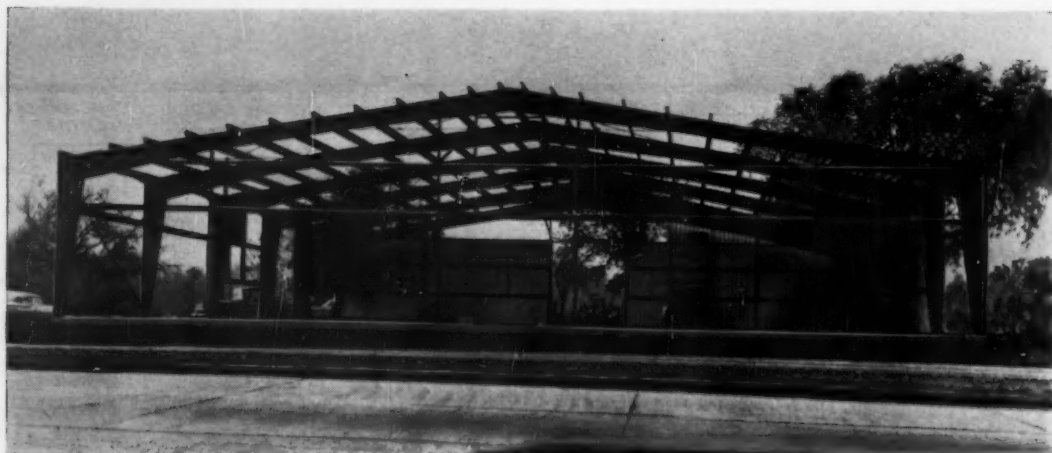
Building Requirements

In building a dealership or shop there are four primary factors to guide the design. The building must have a functional, efficient and adequate floor plan in a minimum of space. The floor plan should provide for expansion without major structural revision. Yet it still should maintain an efficient and adequate floor-plan. Flexibility or multi-use possibilities, so that the building may be easily converted to other purposes without major structural or mechanical revision should be considered. Economical and rapid construction without sacrificing esthetics or building

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Repair shops, dealerships and service stations should keep up-to-date with the latest tune-up equipment. Tune-ups offer quick and easy profits.





Top: Pre-engineered steel building under construction shows 80 ft. clear span with no obstructing interior supports. Bottom: Completed building has exterior walls of masonry and glass. (*Inland Steel Buildings*)



quality, using low maintenance cost material and finishes should also be planned.

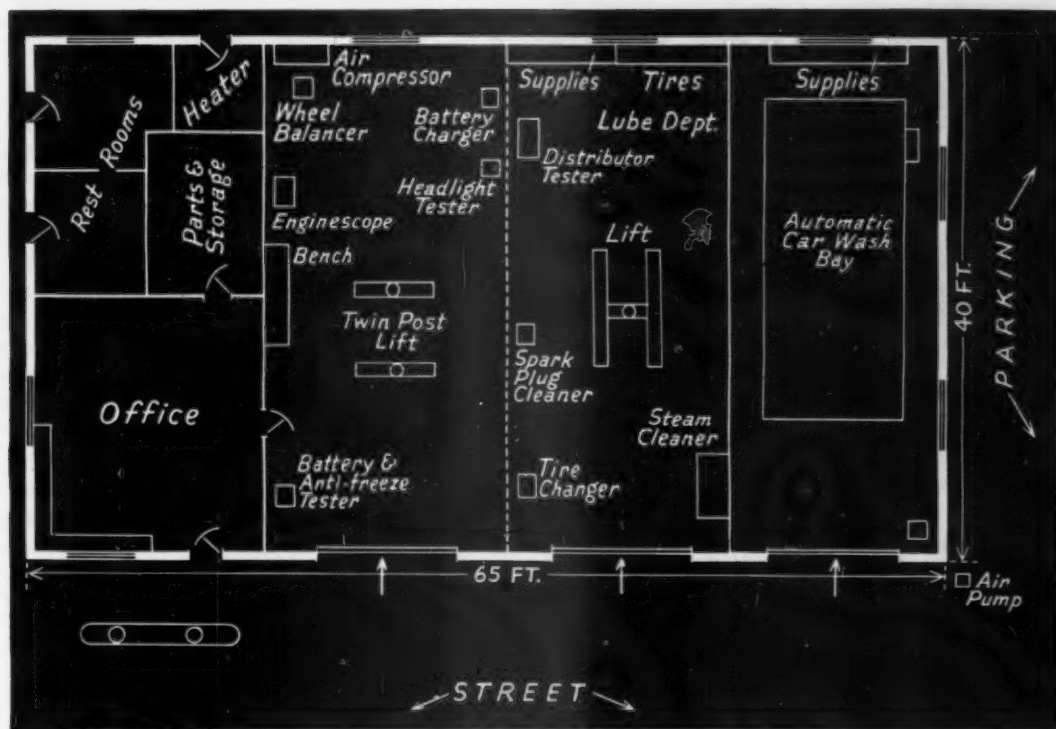
The showroom of the dealership should project forward from the main mass of the building. This would leave a maximum amount of front for the display of new and

used cars. By setting the building back from the side street, a turn-in and slow down area is provided for the service entrance. Place the showroom close to the street corner with the service area to the rear. The service exit from the service department should be unobstructed.

The showroom should have as much glass as possible. There should be a paneling above the showroom windows. Paneling serves the functional purpose of reducing air conditioning, and heat loads.

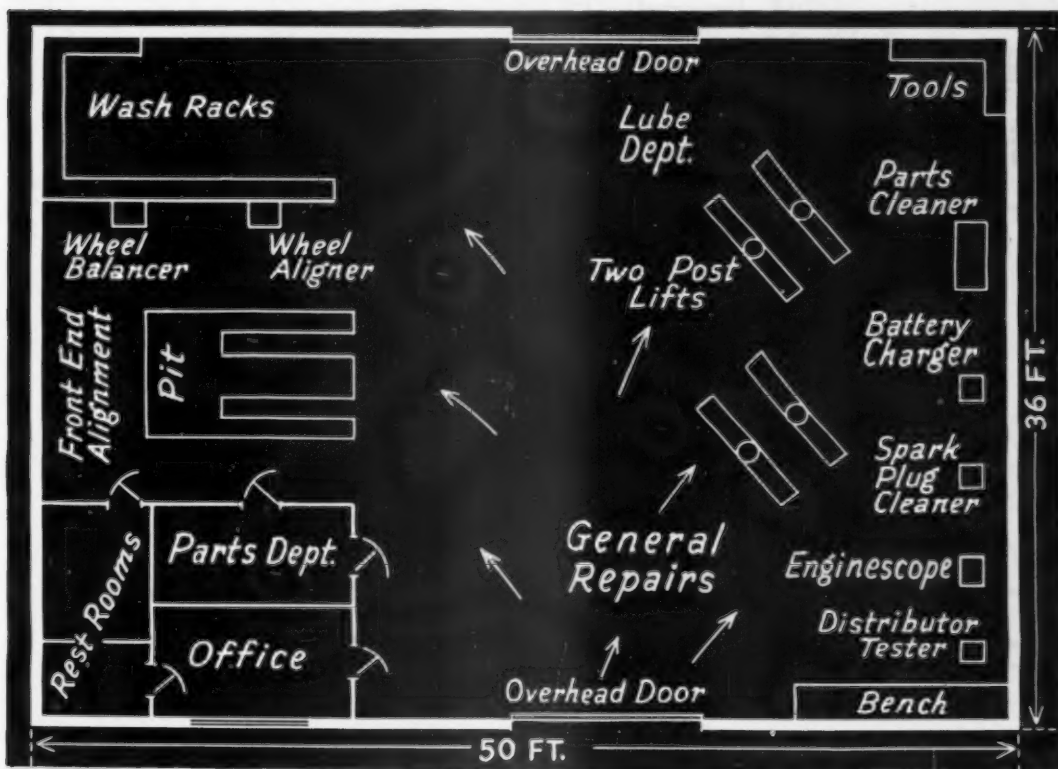
What are the space requirements for the various departments of a dealership? Accord-

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This three bay service station has a well layed out floor plan for volume work. It does light repair work, tune-ups, lube and wash jobs. Modern tools and equipment are used.

This small 50 X 36 ft. repair shop is doing a volume business. It contains two lifts and a front end alignment pit. Entrance and exit are well located.

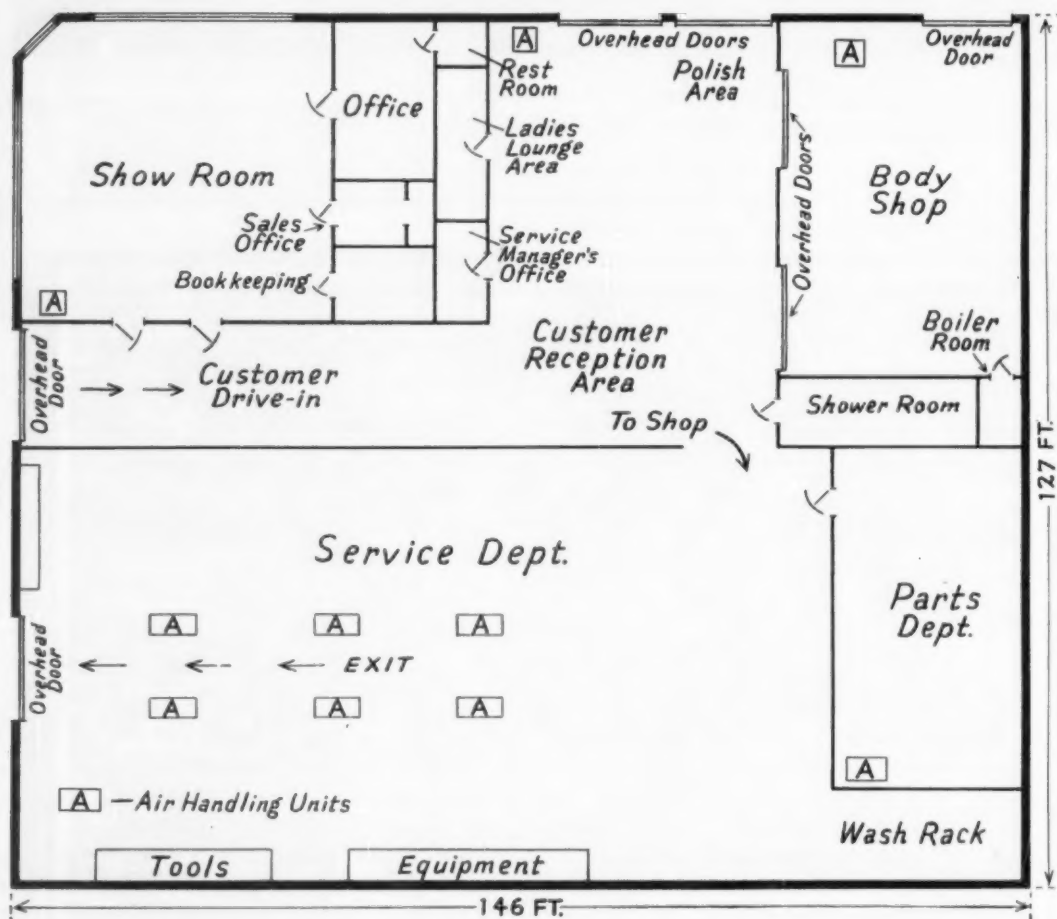




Air conditioning units are indicated in this floor plan by the symbol (A). Installation of air conditioning increases employees' comfort and output during the hot summer months.

ing to one auto manufacturer the service department will require 72 per cent of the total area of the building. In planning an ideal dealer operation it has been found that a minimum of 10,000 sq. ft. of building area is required. This provides building space for new car sales, service and parts activities. Outside area for the service parking and used car sales must be provided in proportion to this size of building. The sales department should take up about 18 per cent of the building area. Parts department should take up about 10 per cent of the building. Ample space should be provided for receiving, shipping, storing, disbursing and displaying parts and accessories. Doors to the street should be 12 to 20 ft. wide and 12½ ft. high at the minimum.

Each manned service bay should return a



gross profit at least equal to the mechanic's earnings. On the usual 50/50 mechanic pay incentive system, this would mean, for example: \$5.00 labor rate \times 8 hrs. work = \$40 sales (for 100 per cent productivity). That is \$20 to the mechanic and \$20 to the employer. Each general purpose repair bay should be at least 10 feet wide by 25 feet deep with ample entry and exit space. Cars in recent years measure from 17 to 19 feet in overall length. New compacts average 14 to 16 feet. All are from 6 to 7 feet wide. Inadequate bay space can materially reduce mechanic productivity.

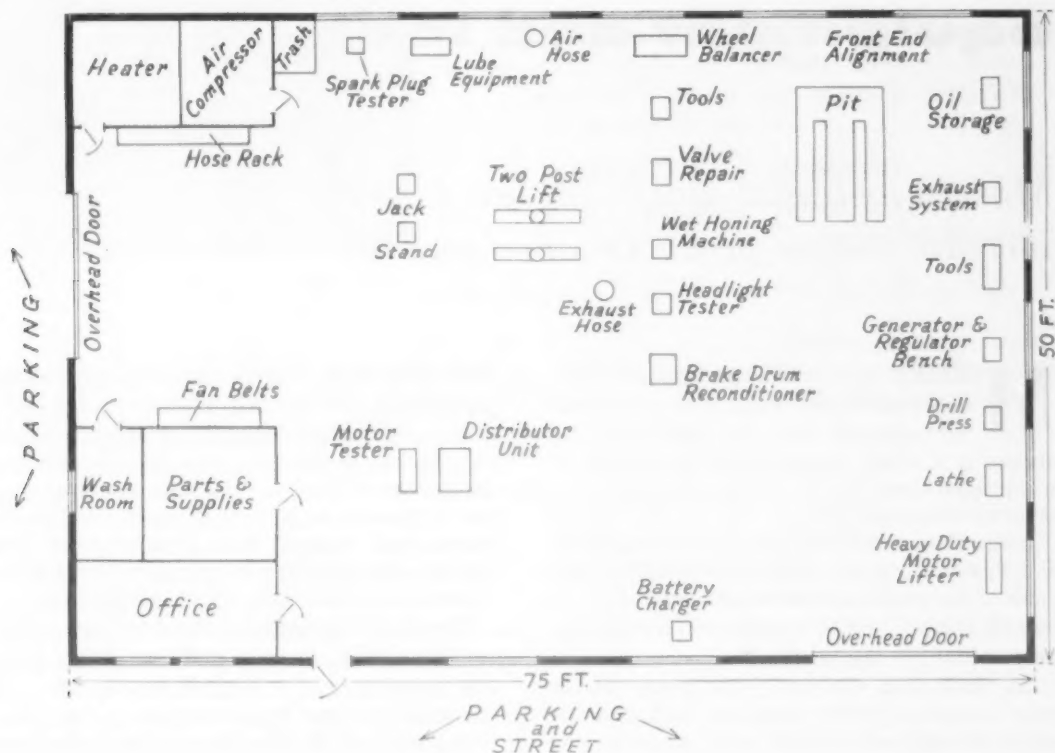
Special purpose bays should be 12 feet or more wide to accommodate special equipment and functions, but a 25 foot depth should remain constant for good shop layout as follows:

Continued on page 58



The service department of this foreign car dealership features three rotary vents, and ten sections of translucent plastic in the roof for improved natural lighting. Structural steel frames, roof and wall panel were pre-engineered and precision-fabricated. (Butler Buildings)

Independent repair shop below is equipped to handle light and heavy repairs and specializes in automotive electrical repairs.





Only modern engine tune-up equipment can pinpoint elusive electrical and carburetion problems on customer's cars.



Special service tools are essential to speed up work on today's complicated automobiles and thus show a profit.

The role of modern equipment and tools

Modern tools and equipment are a "must" to increase volume production and profits

MODERN equipment and tools are vital to Good Shopkeeping. It is an obvious statement to note that the car of the sixties is a vastly more complicated piece of machinery than the car of thirty, twenty—or even ten years ago.

Your shop employees like good equipment. It helps them to do the job more safely and easier. Is your establishment equipped to handle the volume of service you should expect in the coming year?

Sit back and evaluate your potential. Is your shop equipment adequate, and in ship-shape condition? Would new modern effi-

cient equipment help you attain more volume production with related higher profits?

Now is the time to make your decision. If the answer to any of these questions is no, then a lot of serious thinking and planning for the future is in store for you. Customers expect and demand first class service. The service that satisfies them cannot be had in a poorly equipped and disorganized shop.

Check the amount you've spent on sublet repairs and you'll soon find that large sums are being spent for outside repair work. If space and proper equipment were provided, this profit you're turning over to other firms



Headlight adjusting and candlepower checking equipment is a must for service lights.



Dynamic wheel balancing is the easiest and the quickest profit maker you could add to your quick service department.



Wheel alignment equipment with assists from power tools and welding equipment make you a automotive chassis specialist.

can be kept at home. Profits and customer satisfaction can be increased by setting up additional facilities and equipment to do ALL the service your customers require. A detailed analysis of "cost of sales" and "lost customers" is a must in the final decision to move forward with new service equipment and modern facilities to meet the challenge of a Booming Service Market.

Here is the minimum service equipment you should have to enjoy profitable and complete customer satisfaction. It is assumed of course, that when a spark plug cleaner or lift is listed you have adequate air and elec-

tric utilities to operate this and other equipment. Don't sell yourself short on water, gas and electrical supply lines of adequate size to your establishment.

SERVICE

LUBRICATION—

EQUIPMENT:

Vehicle Lift
Chassis Lube. Pressure Unit
Transmission Lube. Unit
Differential Lube. Unit
Hand Oilers & Measures
Wheel Bearing Washer & Packer
Impact Tool
Tire Service Tools
Quick Charger
Air Compressor
Distributor Tester
Engine Diagnosis Tester
Headlight Aimer
Battery & Anti-Freeze Tester

QUICK SERVICE—

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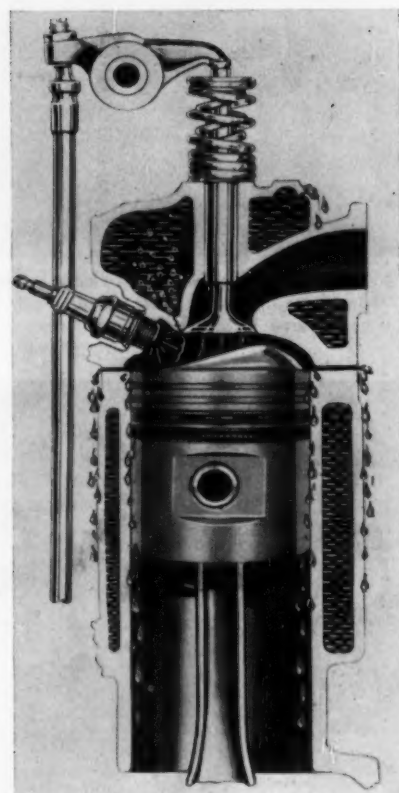
DETECTING COOLING system leaks

*Protect customer's engine
by checking system for in-
ternal and external leaks*

A LEAKING head gasket, an improperly torqued cylinder head, a warped or cracked head, a cracked block, a porous point in the head or block, can allow hot exhaust gas to be blown into the cooling system under combustion pressures. The exhaust gases are forced through these defects into the cooling system under pressures as high as 700 pounds per square inch. In the early stages of any of these defects, they may be tight enough to prevent liquid leakage back into the engine. This is because the maximum pressure of the coolant on the other side of this defect in a pressure type cooling system never exceeds 35 pounds per square inch.

As these combustion gases enter the cooling system, they deplete or destroy the effectiveness of inhibitors added to the cooling system coolant, water, or antifreeze. These combustion gases then form acids and residues which are directly responsible for corrosion of cooling system metals, as well as rapid formation of rust and sludge which can cause the radiator to clog.

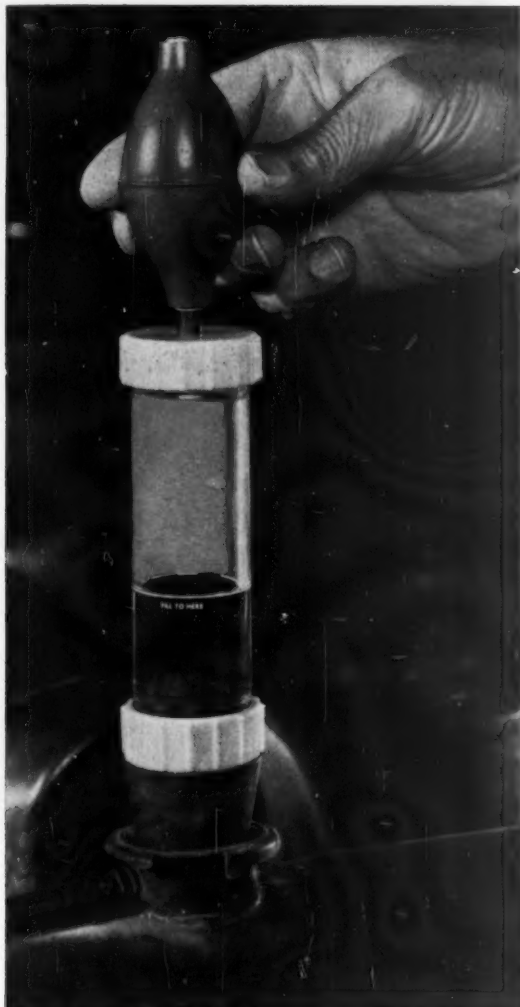
These defects, with the small or pinpoint combustion leaks into the cooling system, are the birth of "engine-cancer." The leaking ex-



Cooling system leakage must be stopped before adding coolant to the system.

haust gas burns and corrodes the area through which it enters the cooling system because the temperatures of the gases are as high as 4500 degrees F. in the combustion chamber. As this burning and corrosion continues, the combustion leak usually grows larger. This allows the coolant to drain into the combustion chamber and then into the crankcase.

Our "engine cancer" has now grown to the



Above is shown a chemical tester used to check for any exhaust gases in the cooling system.



Pressure test each engine after repairs to insure against any internal or external leaks.

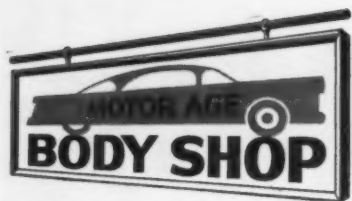
point where it can and will cause serious trouble. Water and coolant solutions are not suitable for engine lubrication. Either, mixed with the engine oil, may form sludge, which causes lubrication failure, sticking piston rings and pins, valves and valve lifters, and even extensive engine damage if driving is continued.

When neglected or overlooked "engine-cancer" can result in a cracked head or block

(arising from a leak originating in a head gasket failure), cracked or loose valve seats, and even seizure of the moving parts in the engine.

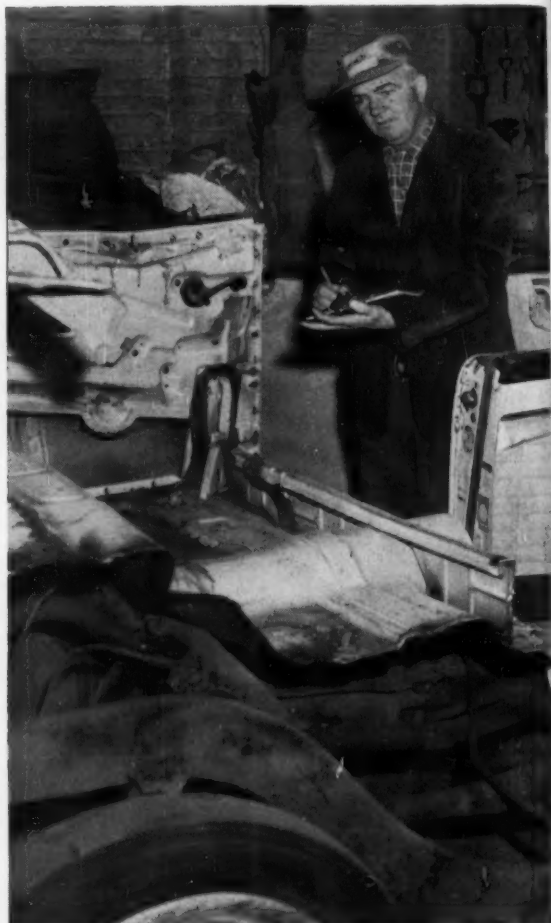
In any of these cases, expensive repairs are required which could have been avoided by exposing the "engine-cancer" in its early stages and eliminating it at that time. Compression ratios have risen in recent years

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Tips for WRECK Estimating

Estimator explains the type of repairs required and their cost to the customer.



An expert giving a job the sharp eye and pencil.

Plastic work is handled by experts who do an excellent job in short order.



Follow a specific pattern when figuring damages says veteran body shop operator. Start inspection from point of impact.

AL'S Auto Body Service, Trenton, N.J. gets more than its share of the wreck work in town because of its reputation for close estimating.

"It's been getting more expensive every year in repairing car damages," says Frank G. Cannon, general manager and chief estimator. "Repairing the averaged wrecked car today costs about \$100 more than it did three years ago. Some of them are so badly banged up that it isn't practical to attempt to repair them at all."

The average repair job runs about \$300. Cannon pointed out that it isn't unusual for a car to be damaged to the extent of \$500 to

\$1,000 or more. As to whether or not a car is worth repairing depends quite a bit on its age.

"A 1950 car, for example, is rarely worth more than a couple hundred dollars," he continued. "If the damage done to it is greater than that, it isn't likely worth repairing. The man who owns it would do well to go out and buy another one. If insurance is involved, it is important to realize that the insurance company will probably never pay more than the actual cash value of the vehicle at the time of the accident."

Cannon figures that he has estimated the cost of repairing at least a quarter of a million

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Ability to give accurate estimates over the 'phone subject to seeing the job can mean profit or loss.



Quality repairs are a must in satisfying customers who after all are the backbone of success.





Big PROFITS

LITTLE cars have meant big profits for Ed Kunke, who operates a service station at 41st and Peoria Avenue in Tulsa, Oklahoma. Even before Kunke entered the oil marketing field he saw a need for a station that could service sports cars properly.

Kunke drove a Porsche down Peoria Avenue in the Brookside shopping area where his station is now located. At every station where he inquired about service for the Porsche the operators were unable to lubricate it. Most station operators showed little

interest in servicing the sports car. Others, who did show desire to help, had inadequate equipment to do a proper job.

"I decided when I went into the business that I'd regard sports cars as an opportunity instead of a nuisance," Kunke said. "And I haven't been sorry."

After Kunke took over the new station some of his sports car friends began dropping by.

"They came in for gasoline, air, water and a whiskbroom cleaning," Kunke said. "But

Busy gas islands, always full of regular service customers.





from Small Car Service



Ed Kunke fills the till with small car profitable service.

they also wanted lubrication and grease jobs. And they were inquiring about accessories."

Kunke then made a move that has meant a constant increase in new business and higher profits for him. He began to go all-out in servicing sports cars. An all-out effort called for installation of special equipment and an extensive line of accessories.

The first step, in which Kunke sought the help of equipment specialists, was the installing of a special lift for the small cars. This

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Selection of new service equipment allows for fully handling all cars.



BODY SHOP TIPS



How To Keep Plastic Knobs From Cracking

To prevent new plastic knobs from cracking when being installed on new items in cars, just immerse the plastic in hot water until it is pliable. Then place in proper position. If knobs wear loose, remove them and fill holes with auto body plastic. Then push knob in place and it will be secure. *Raymond Lindquist, Route 1, Williams, Minn.*

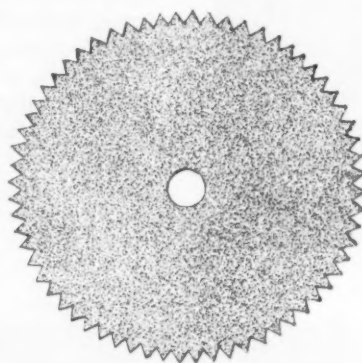
Tool For Straightening Fenders Near The Edges

We've made a tool from a length of $\frac{3}{4}$ inch round rod. Tool is tops for quick, easy straightening of fenders near the edges, especially near the wheel inlets. We use a 24 inch length of $\frac{3}{4}$ inch rod, threaded 4 inches on one end. A nut was run up all the way and a large $3\frac{1}{2}$ inch washer welded just above it. A 5 inch length of pipe that just fits over the nut was welded to the washer for the handle. The hammer is made next by using another 5 inch length of the same pipe. Another 5 inch length of 2 inch pipe is put over this so one is inside the other. Fill the space with melted lead for weight. Be sure this hammer is fitted over the rod before welding another $3\frac{1}{2}$ inch washer, 14 inches from the first. Now heat, bend and flatten the end approximately 2

inches out, with a 1 inch lip. File off any rough edges on the tip of the lip. *G. D. Lynch, c/o George's Garage, 70 Woodfin Ave., Ashville, N.C.*

Sanding Disc Reworked For Grinding Finishes

I have found that cutting small V's out of a disc edge up to $\frac{1}{2}$



inch is perfect for finishing reverse curves. It does a very fine finishing job instead of gouging as a conventional disc will do when trying to finish covered areas. It also reduces heat on flat panel grinding. Discs cut this way will seldom ever make the panel warm. *Robert Pedrick, Morrisville Motors, 658 W. Bridge St., Morrisville, Pa.*

Using A "Copper" Brush To Spread Flux For Welding

To apply solder firmly and smoothly on materials like galvanized iron, cast iron or steel,

is generally difficult. The job goes easier, quicker and surer by making a "copper" brush to spread the conventional liquid flux used. Make the brush from an ordinary tin-handled brush used for soldering flux. Replace the bristles with a bundle of the fine stranded copper wires found in lamp cords. Connect the positive wire from a battery or any 2 to 4-volt source to the brush handle, and the negative wire is clipped to the work. Then brush the soldering acid across it with the copper brush. This forms a thin plating of copper on the surface to be soldered, and soldering difficulty is erased. *Stanley Clark, Box 2162, East Bradenton, Fla.*

Align Fenders To Cowl Before Tightening Radiator Support

When I install a complete front end, fenders, hood, radiator, frame, etc., I always mount the radiator frame first. Then the fenders are bolted firmly and fitted to the doors. If the radiator frame is not aligned to the hood, watch out! Have the hood all mounted to fit the cowl. Lower it and then tighten your radiator frame down. This gives a perfect fit every time. *Victor Sipla, c/o Alice Day, Grand Marsh, R.D. 1, Wisc.*

BODY SHOP TIPS are worth

\$7.50

If you've developed an Idea that has helped you to do body and fender work or painting better or faster, it may be worth money. Jot down the idea and, if necessary, make a rough sketch. Sometimes a snapshot will help. Just make the description of your BODY SHOP TIP clear, and if it is used, you'll receive a check for \$7.50.

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Editorial note: This year in response to requests "Clearing House Problems" are listed—marked by (ch) after the item.

Body Shop Tips are listed under the Body Work heading. The symbol (sf) after an item means the story was a special feature item in the Motor Age Body Shop.

MOTOR AGE—JANUARY 1961 YOUR TICKET TO AN INDUSTRY PREVIEW

1961 will open broad new horizons for Motor Age readers bent on building their volume and profits. New opportunities for men whose ambition it is to be better managers, better merchandisers.

With new car and truck registrations at an all time high there should be plenty of business for service-minded operators, regardless of gloom, indecision or an economic "coffee break." There will be plenty of work to be done and you can read all about it in the "Leadership Forecasts" a new service for Motor Age readers.

Your ticket to the Preview will be reported in advance stories on the National Automobile Dealer Assn. Convention and Equipment Exhibit in San Francisco and the Automotive Industry Service Assn. Convention and Show, the latter presented by the Pacific Automotive Show in Los Angeles.

Then again, take the new technical innovations for 1961. Motor Age editors will discuss new developments such as aluminum engines, transaxles, new automatic transmissions, self-adjusting brakes, anti-smog devices, voltage regulators and compact car tune-up.

Following are prices at factory for cars with standard equipment as of Nov. 23, 1960
State or local taxes, transportation and finance charges and optional equipment are extra.

Following are prices at factory for cars with standard equipment as of Nov. 23, 1960
State or local taxes, transportation and finance charges and optional equipment are extra.

† For 6 cyl. models deduct \$105 from List Price and \$113 from Suggested Delivered Price at Factory. ▲ For 6 cyl. models deduct \$100 from List Price and \$107 from Suggested Delivered Price at Factory.
 ‡ For 5 cyl. models deduct \$111 from List Price at Factory and \$119 from Suggested Delivered Price at Factory.
 § For 6 cyl. models deduct \$111 from List Price and \$119 from Delivered Price at Factory.



Servicing farm equipment ideal for winter season

*Now's the time to gain extra
profits by servicing IDLE
farm machinery & equipment*

THE men who operate the Nation's bread basket have a whopping investment in automotive machinery. These vehicles must be serviced to protect their investment. It has been reported that the number of vehicles on American farms is now over 11,950,014. These breakdown into the following categories: Cars, 4,256,152; trucks, 3,006,000; and tractors, 4,687,862. Each year the American farmer adds to the mechanization of America's bread basket many more units driven by gas or Diesel engines. You can make yourself among those responsible for the maintenance of these machines.

Are you getting your share of the profits to be derived from the regular service of farm machinery? Now is the time to put forth the effort to gain these vehicles for winter service profits. The farmer has finished the harvest. His machinery is IDLE. His corn cribs are full. This then is your opportunity to fill your shop with good profitable winter work and at the same time fill the till.

Go out after this profitable segment of the service market. Call all your local farmers and ask them to allow you the opportunity of providing them with trouble free spring planting with your preventive maintenance program. Your experience with auto and truck repairs should provide you with a good basis for developing a saleable PM program for the farmer. He needs it. It's up to you to sell him. Go out and get the business. It's there to be had. The tables of tractor specifications on the following pages should prove helpful in the endeavor.

WHEEL TRACTORS ... 1960

Line Number	TRACTOR MAKE AND MODEL	GENERAL				DRAW-BAR		OVERALL DIMENSIONS			TIRE SIZE (in.)		H.P. RATING		Nebraska Test Number	Forward Travel Speeds at Normal Governed Engine RPM with Standard Wheels		Reverse Travel Speeds at Normal Governed Engine RPM with Standard Wheels				
		Wheelbase (in.)	Minimum Turning Radius Outside (ft.)	Ground Clearance (in.)	Shipping Weight with Rubber Tires (Lb.)	TREAD (in.)		Lateral Adjustment (in.)	Height Above Ground (in.)	Length (in.)	Width (in.)	Height-To Highest Point (in.)	Front	Rear		Belt	Drawbar	Power Take-Off	No. of Speeds	Range (MPH)	No. of Speeds	Range (MPH)
						Minimum	Maximum															
1	Allis-Chalmers D-10	79 1/2	8 1/2	20	2670	42	72	10 1/2	12 1/2	120 1/2	59 1/2	76	4.00/15	9/24	30.00	26.00	724	Op	4	1.80-10.75	1	3.33
2	D-12	78 1/2	8 1/2	20	3040	52	79 1/2	10 1/2	13 1/2	121 1/2	67 1/2	76 1/2	5.00/15	10/24	30.00	25.70	723	Op	4	2.00-11.40	1	3.50
3	D-14	85 1/2	8 1/2	21 1/2	4175	51	80	10 1/2	14 1/2	128 1/2	67	79 1/2	5.50/15	11/26	35.65	32.19	623	St	8	1.50-12.50	2	2.60-3.75
4	D-17	93	9 1/2	21	5280	58 1/2	92 1/2	10 1/2	14 1/2	140 1/2	76 1/2	81	6.00/16	13/28	54.43	48.14	635	St	8	1.80-12.00	2	2.40-3.50
5	D-17LP	95 1/2	9 1/2	21	5680	58 1/2	92 1/2	10 1/2	14 1/2	143 1/2	76 1/2	81	6.00/16	13/28	53.33	47.06	636	St	8	1.80-12.00	2	2.40-3.50
6	D-14LPG	83 1/2	9 1/2	21 1/2	4220	51	80	10 1/2	14 1/2	128 1/2	67	79 1/2	5.50/16	11/26	33.23	29.61	645	St	8	1.50-12.50	2	2.60-3.75
7	D-17LPG	93	9 1/2	21 1/2	5440	53	92 1/2	10 1/2	15 1/2	146 1/2	76 1/2	81	6.00/16	13/28	53.00	47.24	644	St	8	1.50-12.00	2	2.40-3.50
8	Brookway 49D	76 1/2	10 1/2	20	3600	48	76	28 1/2	18	115	63	62 1/2	6.00/16	11/28	35.00	32.00	.....	St	4	2.16-12.00	1	1.72
9	49G	76 1/2	10 1/2	20	3600	48	76	28 1/2	18	115	63	62 1/2	6.00/16	11/28	31.75	28.00	.....	St	4	2.16-15.00	1	1.69
10	49K	76 1/2	10 1/2	20	3600	48	76	28 1/2	18	115	63	62 1/2	6.00/16	11/28	27.00	24.00	.....	St	4	2.16-15.00	1	1.69
11	Case 441	79 1/2	8 1/2	19 1/2	2805	48	88	8	15 1/2	130	79 1/2	56	5.00/15	10/28	.....	.....	.....	Op	4	2.50-11.80	1	3.00
12	441	84 1/2	8 1/2	21 1/2	3234	48	88	8	15 1/2	130	79 1/2	56	5.00/16	13.6/28	.....	.....	.....	Op	4	2.60-13.40	1	3.30
13	531	88	8	25	.....	54	88	8	18 1/2	138	80 1/2	63 1/2	6.00/16	12.4/36	.....	.....	.....	Op	4	2.70-13.00	1	3.20
14	531	88	8	25	.....	54	88	8	18 1/2	138	80 1/2	63 1/2	6.00/16	12.4/36	.....	.....	.....	Op	4	2.70-13.00	1	3.20
15	731GP	101 1/2	8 1/2	24 1/2	6191	52	108	20 1/2	Ad	132	85 1/2	67	6.00/16	13.6/38	.....	.....	NT	Op	8	1.50-8.00	2	2.00-7.20
16	731GP	92 1/2	8 1/2	24 1/2	6191	52	108	20 1/2	Ad	143 1/2	85 1/2	67	6.00/16	13.6/38	.....	.....	NT	Op	8	1.50-8.00	2	2.00-7.20
17	741GP	101 1/2	8 1/2	24 1/2	6918	52	108	20 1/2	Ad	132	85 1/2	67	6.00/16	13.6/38	.....	.....	NT	Op	8	1.50-8.00	2	2.00-7.20
18	741GP	92 1/2	8 1/2	24 1/2	6918	52	108	20 1/2	Ad	143 1/2	85 1/2	67	6.00/16	13.6/38	.....	.....	NT	Op	8	1.50-8.00	2	2.00-7.20
19	831GP	101 1/2	8 1/2	24 1/2	6542	52	108	20 1/2	Ad	132	85 1/2	67	6.00/16	13.6/38	.....	.....	NT	Op	8	0.7-4.0	2	0.6-6.0
20	831GP	92 1/2	8 1/2	24 1/2	6542	52	108	20 1/2	Ad	143 1/2	85 1/2	67	6.00/16	13.6/38	.....	.....	NT	Op	8	0.7-4.0	2	0.6-6.0
21	841GP	101 1/2	8 1/2	24 1/2	6329	52	108	20 1/2	Ad	132	85 1/2	67	6.00/16	13.6/38	.....	.....	NT	Op	8	0.7-4.0	2	0.6-6.0
22	841GP	92 1/2	8 1/2	24 1/2	6329	52	108	20 1/2	Ad	143 1/2	85 1/2	67	6.00/16	13.6/38	.....	.....	NT	Op	8	0.7-4.0	2	0.6-6.0
23	830	83 1/2	11 1/2	13 1/2	6682	67 1/2	84	15	141	84	93 1/2	7.50/18	14/34	.....	.....	NT	Op	6	2.50-14.10	1	3.30	
24	940LPG	83 1/2	11 1/2	14	7820	67 1/2	84	15	141	84	93 1/2	7.50/18	14/34	.....	.....	NT	Op	6	2.50-14.10	1	3.30	
25	Caterpillar DW15	121 1/2	41 1/2	15 1/2	21530	.....	.....	.....	.....	2005 1/2	107 1/2	111	12/20	26.50/25	.....	.....	.....	5	2.70-29.10	1	4.10	
26	DW20	126	41 1/2	18	27370	.....	.....	.....	.....	211 1/2	118	125 1/2	14/24	29.50/29	.....	.....	.....	5	3.20-27.80	1	4.10	
27	DW21	307	36	18	40520	.....	.....	.....	.....	188	141	137	N	29.50/29	.....	.....	.....	6	2.60-22.00	1	3.30	
28	619	269	30	16	32260	.....	.....	.....	.....	179 1/2	106	107	N	26.5/25	.....	.....	.....	6	3.00-30.20	2	3.50-7.10	
29	Cockshutt 540	81	12 1/2	19 1/2	4295	48	70	8	Ad	120	66	60	5.50/16	11/28	.....	.....	St	6	1.70-12.10	2	2.70-5.20	
30	550G	87	14 1/2	17	4500	53 1/2	92	12	Ad	132	74	74 1/2	5.50/16	11/38	.....	.....	Op	5	1.85-13.40	2	3.26-6.22	
31	550D	87	14 1/2	17	4560	53 1/2	92	12	Ad	132	74	74 1/2	5.50/16	11/38	40.18	35.10	681	Op	5	1.85-13.40	2	3.26-6.22
32	560	87 1/2	14 1/2	17	5036	53 1/2	112	11 1/2	Ad	138	72 1/2	78	6.00/16	14/34	50.45	46.65	682	Op	6	1.81-13.20	2	3.19-6.08
33	570G	87 1/2	14 1/2	17	6320	53 1/2	112	11 1/2	Ad	138	72 1/2	78	6.00/16	14/34	.....	.....	Op	6	1.81-13.20	2	3.19-6.08	
34	570D	87 1/2	14 1/2	17	6300	53 1/2	112	11 1/2	Ad	138	72 1/2	78	6.00/16	14/34	63.66	52.97	683	Op	6	1.81-13.20	2	3.19-6.08
35	Deere John 330-S	70	.....	21	2650	38 1/2	54 1/2	25 1/2	Ad	118 1/2	53 1/2	69 1/2	5.00/15	9/24	.....	.....	St	4	1.63-12.00	1	1.63	
36	330-U	77 1/2	.....	11	2750	40 1/2	56 1/2	26 1/2	Ad	119 1/2	53 1/2	69 1/2	5.00/15	9/24	.....	.....	Op	4	1.63-12.00	1	1.63	
37	430-H	80 1/2	32 1/2	3400	54	84	12	Ad	132	72	86	6.00/16	10/38	29.21	27.08	.....	Op	4	1.63-6.25	1	2.50	
38	430-S	70	21	2750	38 1/2	54 1/2	12	Ad	114 1/2	55 1/2	73 1/2	5.00/15	9/24	29.21	27.08	.....	St	4	1.63-6.25	1	2.50	
39	430-T	82 1/2	21 1/2	3000	48	96	10 1/2	Ad	130 1/2	66 1/2	76 1/2	5.00/15	10/34	29.21	27.08	.....	St	4	1.63-6.25	1	2.50	
40	430-U	77 1/2	8 1/2	2647	40 1/2	56 1/2	10 1/2	Ad	118 1/2	54 1/2	69 1/2	5.00/15	10/34	29.21	27.08	.....	Op	4	1.63-6.25	1	2.50	
41	430-V	72 1/2	8 1/2	2647	40 1/2	56 1/2	10 1/2	Ad	118 1/2	54 1/2	69 1/2	5.00/15	10/34	29.21	27.08	.....	St	4	1.63-6.25	1	2.50	
42	430-W	85	.....	3000	48	96	8	16 1/2	136 1/2	74 1/2	70 1/2	6.00/16	12/26	.....	.....	Op	4	1.63-6.25	1	2.50		
43	440-I	85	17 1/2	3800	56	60	6	16 1/2	136 1/2	74 1/2	70 1/2	6.00/16	12/26	.....	.....	718	Op	4	2.17-13.98	1	3.15	
44	440-ID	85	17 1/2	4200	56	60	6	16 1/2	136 1/2	74 1/2	70 1/2	6.00/16	12/26	.....	.....	717	Op	4	2.00-12.93	1	2.91	
45	435-D	85	21	3750	48	88	6	16 1/2	136 1/2	85 1/2	71 1/2	6.00/16	10/34	.....	.....	716	Op	4	1.88-13.50	1	2.88	
46	430-R	90	8 1/2	24 1/2	4960	56	88	8 1/2	16 1/2	132 1/2	80 1/2	83 1/2	5.50/16	12.40/36	36.58	34.31	597	Op	6	1.50-10.00	1	2.50
47	430-R	90	8 1/2	25 1/2	5860	56	88	8 1/2	16 1/2	139	80 1/2	84 1/2	6.00/16	13.60/38	48.68	44.16	598	Op	6	1.50-11.50	1	2.25
48	430-H	90 1/2	14	25 1/2	6480	62	80	8 1/2	16 1/2	123 1/2	80 1/2	81 1/2	6.00/16	14/30	48.68	44.16	599	Op	6	1.50-11.50	1	2.25
49	430-H	90 1/2	14	30 1/2	7250	60	90	8 1/2	16 1/2	123 1/2	80 1/2	81 1/2	6.00/16	14/30	48.68	44.16	598	Op	6	1.50-11.50	1	2.25
50	730-R	91 1/2	8 1/2	25 1/2	6790	60	80	8 1/2	16 1/2	135 1/2	80 1/2	81 1/2	6.00/16	15.50/38	58.12	53.05	605	Op	6	1.33-11.25	1	3.33
51	730-S	82 1/2	14	13	7380	62	80	8 1/2	16 1/2	123 1/2	80 1/2	81 1/2	7.50/16	15/30	58							

1960 WHEEL TRACTORS

Make and Model	ENGINE				FUEL		BELT PULLEY										CAPACITIES					Line Number						
	Number of Cylinders—Bore and Stroke (In.)	Piston Dia. (Cu. In.)	R.P.M. at Governed Speed	Valve Arrangement	Number of Main Bearings	Diameter of Main Bearings	Standard	Optional	Ignition Make	Carburetor or Injector Pump Make	Air Cleaner Make	Governor Make	Oiling System Type	Cooling System Type	Clutch—Make and Type	Final Drive—Type	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Fuel Drive Cases (Qts.)	Starting Method		
Ow. 10	4-3 1/2 x 3 1/2	139	1650	I	3	2 1/2	G		DR	Zen	Don	Ow. P	Pu	Roc	SP	SG	8	5 1/2	1220	FK	2	12 1/2	4	6 1/2	2 1/2	Ele	1	
Ow. 10	4-3 1/2 x 3 1/2	139	1650	I	3	2 1/2	G		DR	Zen	Don	Ow. P	Pu	Roc	SP	SG	8	5 1/2	1220	FK	2	12 1/2	4	6 1/2	2 1/2	Ele	2	
Ow. 149	4-3 1/2 x 3 1/2	149	1650	I	3	2 1/2	G		DR	Mar	Don	Ow. P	Pu	Roc	SP	SG	9	6 1/2	1354	FK	2 1/2	14	4	14 1/2	2 1/2	Ele	4	
Ow. 17	4-4 x 4 1/2	226	1650	I	7	3	G		DR	Zen	Uni	Ow. P	Pu	Roc	SP	SG	9	6 1/2	1384	FK	3 1/2	20 1/2	6	20 1/2	2 1/2	Ele	5	
Ow. DA202	6-3 1/2 x 4 1/2	262	1650	I	3	2 1/2	LP		DR	Ens	Uni	Ow. P	Pu	Roc	SP	SG	9	6 1/2	1384	FK	2 1/2	18 1/2	4	14 1/2	1 1/2	Ele	6	
Ow. 149	4-3 1/2 x 3 1/2	149	1650	I	3	2 1/2	G		DR	Ens	Uni	Ow. P	Pu	Roc	SP	SG	9	6 1/2	1384	FK	2 1/2	18 1/2	4	14 1/2	1 1/2	Ele	7	
Ow. 226	4-4 x 4 1/2	226	1650	I	3	2 1/2	LP		DR	Ens	Uni	Ow. P	Pu	Roc	SP	SG	9	6 1/2	1384	FK	3 1/2	20 1/2	6	20 1/2	2 1/2	Ele	8	
Cont. GD157	4-3 1/2 x 4 1/2	157	2000	I	3	2 1/2	O		AL	Bos	Don	P	TS	Roc	SP	CH	8 1/2	6 1/4	1650	FK	5	12 1/2	5	14	4	Ele	9	
Cont. F162	4-3 1/2 x 4 1/2	162	2400	I	3	2 1/2	K		AL	Mar	Don	P	TS	Roc	SP	CH	8 1/2	6 1/4	1800	FK	5	12 1/2	5	14	4	Ele	10	
Cont. F162	4-3 1/2 x 4 1/2	162	2400	I	3	2 1/2	K		AL	Mar	Don	P	TS	Roc	SP	CH	8 1/2	6 1/4	1800	FK	5	12 1/2	5	14	4	Ele	10	
Ow. G148S	4-3 1/2 x 4 1/2	148	1750	I	3	2 1/2	G		AD	Mar	Don	Ow. P	Pu	Au.	SP	SG	10 1/2	6 1/2	1190		3	13	4	26	(a)	Ele	11	
Ow. G159	4-3 1/2 x 4 1/2	159	1900	I	3	2 1/2	G		AD	Mar	Don	Ow. P	Pu	Au.	SP	SG	10 1/2	6 1/2	1290	CL	3 1/2	22	4	25	(a)	Ele	12	
Ow. G188D	4-3 1/2 x 4 1/2	188	2000	I	3	2 1/2	G		N	Ros	Don	Ros	P	Pu	Au.	SP	SG	9 1/2	6 1/2	1360		4 1/2	22	4	40	(a)	Ele	13
Ow. G188B	4-3 1/2 x 4 1/2	188	2000	I	3	2 1/2	G		AD	Mar	Don	Ow. P	Pu	Au.	SP	SG	9 1/2	6 1/2	1360	CL	4 1/2	22	4	40	(a)	Ele	14	
Ow. A267	4-4 1/2 x 5	267	1700	I	5	3	O		N	Bos	Don	P	Pu	Roc	SP	SG	10 1/2	7 1/4	1446	DFS	7 1/2	22	9	60	(a)	Ele	15	
Ow. A267	4-4 1/2 x 5	267	1700	I	5	3	O		N	Bos	Don	P	Pu	Roc	SP	SG	10 1/2	7 1/4	1446	DFS	7 1/2	22	9	60	(a)	Ele	16	
Ow. A251	4-4 1/2 x 5	251	1700	I	5	3	O		N	Bos	Don	P	Pu	Roc	SP	SG	10 1/2	7 1/4	1446	DFS	7 1/2	22	9	60	(a)	Ele	17	
Ow. A301	4-4 1/2 x 5	301	1900	I	5	3	O		N	Bos	Don	P	Pu	Roc	SP	SG	10 1/2	7 1/4	1446	DFS	7 1/2	22	9	60	(a)	Ele	18	
Ow. A251	4-4 1/2 x 5	251	1700	I	5	3	O		N	Bos	Don	P	Pu	Roc	SP	SG	10 1/2	7 1/4	1446	DFS	7 1/2	22	9	60	(a)	Ele	19	
Ow. A301	4-4 1/2 x 5	301	1900	I	5	3	O		N	Bos	Don	P	Pu	Roc	SP	SG	10 1/2	7 1/4	1446	DFS	7 1/2	22	9	60	(a)	Ele	20	
Ow. A284	4-4 1/2 x 5	284	1900	I	5	3	G		LP	WI	Mar	Don	Ow. P	Pu	TD	MO	SG	10 1/2	7 1/4	1027	DFS	7 1/2	22	9	60	(a)	Ele	21
Ow. A284	4-4 1/2 x 5	284	1900	I	5	3	G		LP	WI	Mar	Don	Ow. P	Pu	TD	MO	SG	10 1/2	7 1/4	1027	DFS	7 1/2	22	9	60	(a)	Ele	22
Ow. A284	4-4 1/2 x 5	284	1900	I	5	3	G		LP	WI	Mar	Don	Ow. P	Pu	TD	MO	SG	10 1/2	7 1/4	1027	DFS	7 1/2	22	9	60	(a)	Ele	23
Ow. A401	6-4 1/2 x 5	401	1600	I	7	3	O		N	Bos	Don	P	Pu	Roc	SO	CH	11 1/2	8 1/4	1007	SA	10 1/2	28	14	84	(a)	Ele	24	
Ow. A377	6-4 x 5	377	1600	I	7	3	LP		WI	Ens	Don	Ow. P	Pu	Roc	SO	CH	11 1/2	8 1/4	1107	SA	10 1/2	33 1/2	14	84	(a)	Ele	25	
Ow. D382F	6-5 1/2 x 8 1/2	805	2000	I	7	4 1/2	O		N	Ow. Don	Ow. P	Pu	Ow. DP	SH							20	75	33	82	(a)	EG	26	
Ow. D337F	6-5 1/2 x 8 1/2	805	2000	I	7	4 1/2	O		N	Ow. Don	Ow. P	Pu	Ow. DP	SH							23 1/2	130	33	108	(a)	Ele	26	
Ow. DW21	6-5 1/2 x 8 1/2	805	2000	I	7	4 1/2	O		N	Ow. Don	Ow. P	Pu	Ow. DP	SH							23 1/2	120	33	108	(a)	Ele	27	
Ow. DW21	6-5 1/2 x 8 1/2	805	2000	I	7	4 1/2	O		N	Ow. Don	Ow. P	Pu	Ow. DP	SH							23 1/2	120	33	108	(a)	Ele	28	
Cont. F162	4-3 1/2 x 4 1/2	163	1800	L	3	2 1/2	G		DR	Zen	Don	Nev	P	Pu	BB	SP	SG	9	6 1/2	1084	DA	3	13 1/2	4	25	(a)	Ele	29
Her. G0198	4-3 1/2 x 4 1/2	198	1650	I	5	2 1/2	O		DR	Zen	Don	Nev	P	Pu	BB	SP	SG	10	6 1/2	1195	DFS	4 1/2	19 1/2	4 1/2	25	(a)	Ele	30
Her. DD198	4-3 1/2 x 4 1/2	198	1650	I	5	2 1/2	O		DR	Zen	Don	Nev	P	Pu	BB	SP	SG	10	6 1/2	1195	DFS	4 1/2	19 1/2	4 1/2	25	(a)	Ele	31
Her. 4270D	4-3 1/2 x 4 1/2	270	1650	I	3	2 1/2	G		N	CAV	Don	CAV	P	Pu	BB	SP	SG	10	6 1/2	1195	DFS	3 1/2	26 1/2	8 1/2	30	(a)	Ele	32
Her. GO298	6-3 1/2 x 4 1/2	298	1650	I	7	2 1/2	G		DR	Zen	Don	Nev	P	Pu	BB	SP	SG	10	6 1/2	1195	DFS	4 1/2	26 1/2	8 1/2	30	(a)	Ele	33
Her. DD298	6-3 1/2 x 4 1/2	298	1650	I	7	2 1/2	O		N	Bos	Don	Bos	P	Pu	BB	SP	SG	10	6 1/2	1195	DFS	4 1/2	26 1/2	8 1/2	30	(a)	Ele	34
Ow. 330	2-4 x 4	101	1850	I	2	2 1/2	G		O	DR	Mar	Don	Ow. P	TS	Au.	SP	SG	9 1/2	6 1/2	1246	DA	3 1/2	10 1/2	5	8	3 1/2	Ele	35
Ow. 330	2-4 x 4	101	1850	I	2	2 1/2	G		O	DR	Mar	Don	Ow. P	TS	Au.	SP	SG	9 1/2	6 1/2	1246	DA	3 1/2	10 1/2	5	8	3 1/2	Ele	36
Ow. 430	2-4 1/2 x 4	113	1850	I	2	2 1/2	G		O	DR	Mar	Don	Ow. P	TS	Au.	SP	SG	9 1/2	6 1/2	1270	DA	2 1/2	10 1/2	5	8	3 1/2	Ele	37
Ow. 430	2-4 1/2 x 4	113	1850	I	2	2 1/2	G		LP, O	DR	Mar	Don	Ow. P	Pu	Au.	SP	SG	9 1/2	6 1/2	1270	DF	2 1/2	10 1/2	5	9	4	Ele	38
Ow. 430	2-4 1/2 x 4	113	1850	I	2	2 1/2	G		LP, O	DR	Mar	Don	Ow. P	Pu	Au.	SP	SG	9 1/2	6 1/2	1270	DA	2 1/2	10 1/2	5	8	2 1/2	Ele	40
Ow. 430	2-4 1/2 x 4	113	1850	I	2	2 1/2	G		LP, O	DR	Mar	Don	Ow. P	Pu	Au.	SP	SG	9 1/2	6 1/2	1270	DA	2 1/2	10 1/2	5	8	3 1/2	Ele	41
Ow. 430	2-4 1/2 x 4	113	1850	I	2	2 1/2	G		LP, O	DR	Mar	Don	Ow. P	Pu	Au.	SP	SG	9 1/2	6 1/2	1270	DA	2 1/2	10 1/2	5	8	3 1/2	Ele	42
Ow. 440	2-4 1/2 x 4	113	2000	I	2	2 1/2	G		DR	Mar	Don	Ow. P	Pu	Au.	SP	SG	9 1/2	6 1/2	1270	DA	2 1/2	10 1/2	5	8	3 1/2	Ele	43	
GM. 2-5 1/2	2-5 1/2 x 4 1/2	106	1850	I	3	3	O		N	GM	Don	GM	P	Pu	Au.	SP	SG	9 1/2	6 1/2	1276	SA	2 1/2	10 1/2	9	8	7	Ele	44
GM. 2-5 1/2	2-5 1/2 x 4 1/2	106	1850	I	3	3	O		N	GM	Don	GM	P	Pu	Au.	SP	SG	9 1/2	6 1/2	1276	SA	2 1/2	10 1/2	9	8	7	Ele	45
Ow. 630	2-5 1/2 x 5 1/2	190	1375	I	2	2 1/2	G		LP, D	DR	Mar	Don	Ow. P	Pu	Ow. MD	SG	9 1/2	7 1/2	1325	FK	2 1/2	18	7	16		Ele	46	
Ow. 630	2-5 1/2 x 5 1/2	303	1125	I	2	2 1/2	G		LP, D	DR	Mar	Don	Ow. P	Pu	Ow. MD	SG	12 1/2	7 1/2	1125	FK	6 1/2	22 1/2	8	24		Ele	47	
Ow. 630	2-5 1/2 x 5 1/2	303	1125	I	2	2 1/2	G		LP, D	DR	Mar	Don	Ow. P	Pu	Ow. MD	SG	12 1/2	7 1/2	1125	SA	6 1/2	22 1/2	8	24		Ele	48	
Ow. 630	2-5 1/2 x 5 1/2	303	1125	I	2	2 1/2	G		LP, D	DR	Mar	Don	Ow. P	Pu	Ow. MD	CH	12 1/2	7 1/2	1125	DA	6 1/2	22 1/2	8	24	1 1/2	Ele	49	
Ow. 620	2-5 1/2 x 5 1/2	303	1125	I	2	2 1/2	G		LP, D	DR	Mar	Don	Ow. P	Pu	Ow. MD	SG	12 1/2	7 1/2	1125	SA	7	20	9	24		Ele	50	
Ow. 730	2-6 1/2 x 5 1/2	361	1125	I	2	3 1/2	G		LP, D	DR	Mar	Don	Ow. P	Pu	Ow. MD	SG	12 1/2	7 1/2	1125	FK	7 1/2	26 1/2	10	32		Ele	51	
Ow. 730	2-6 1/2 x 5 1/2	361	1125	I	2	3 1/2	G		LP, D	DR	Mar	Don	Ow. P	Pu	Ow. MD	SG	12 1/2	7 1/2	1125	SA	7 1/2	26 1/2	10	32		Ele	52	
Ow. 730	2-6 1/2 x 5 1/2	361	1125	I	2	3 1/2	G		LP, D	DR	Mar	Don	Ow. P	Pu	Ow. MD	CH	12 1/2	7 1/2	1125	DA	7 1/2	26 1/2	10	32	1 1/2	Ele	53	
Ow. 730	2-6 1/2 x 5 1/2	376	1125	I	3	5	O		N	B-S	Don	Ow. P	Pu	Ow. MD	SG	12 1/2	7 1/2	1125	FK	7	20	9	32		EG	54		

1960 MODELS OF TRACTORS . . .

Line Number	TRACTOR MAKE AND MODEL	GENERAL				DRAW-BAR		OVERALL DIMENSIONS		TIRE SIZE (in.)		H.P. RATING		Nebraska Test Number	Forward Travel Speeds at Normal Governed Engine RPM with Standard Wheels		Reverse Travel Speeds at Normal Governed Engine RPM with Standard Wheels					
		Wheelbase (in.)	Minimum Turning Radius Outside (ft.)	Ground Clearance (in.)	Shipping Weight with Rubber Tyre (Lb.)	TREAD (in.)		Lateral Adjustment (in.)	Height Above Ground (in.)	Length (in.)	Width (in.)	Height-To Highest Point (in.)	Front		Rear	Belt	Drawbar	Power Take-Off	No. of Speeds	Range (MPH)	No. of Speeds	Range (MPH)
						Minimum	Maximum															
1	Ford—Cont'd. 771-L	85 1/2	7 1/2	27 1/2	3467	56	84	17 1/2	16 1/2	132 1/2	71 1/2	57 1/2	5.50/16	11/28	32.57	26.28	704	St	10	1.02-15.74	2	3.04-4.49
2	811	74 1/2	8 1/2	21 1/2	2817	52	76	Fx	10 1/2	113 3/4	63 1/2	57 1/2	6.00/16	10/28	46.16	37.22	701	Op	10	0.99-15.30	2	2.95-4.37
3	811-L	74 1/2	8 1/2	21 1/2	2963	52	76	Fx	10 1/2	113 3/4	63 1/2	57 1/2	6.00/16	10/28	41.36	34.97	705	Op	10	0.99-15.30	2	2.95-4.37
4	811-L	74 1/2	8 1/2	21 1/2	2932	52	76	Fx	10 1/2	113 3/4	63 1/2	57 1/2	6.00/16	10/28	43.61	34.97	703	Op	10	0.99-15.30	2	2.95-4.37
5	871, 881	74 1/2	8 1/2	21 1/2	3167	52	76	17 1/2	16 1/2	120 1/2	63 1/2	57 1/2	6.00/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
6	871-D	74 1/2	8 1/2	21 1/2	3323	52	76	17 1/2	16 1/2	120 1/2	63 1/2	57 1/2	6.00/16	12/28	43.61	34.97	703	St	10	1.06-16.36	2	3.16-4.67
7	881-L	74 1/2	8 1/2	21 1/2	3272	52	76	17 1/2	17 1/2	132 1/2	71 1/2	57 1/2	6.00/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
8	971	85 1/2	7 1/2	28 1/2	3509	56	84	17 1/2	17 1/2	132 1/2	71 1/2	57 1/2	6.00/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
9	971-D	85 1/2	7 1/2	28 1/2	3675	56	84	17 1/2	17 1/2	132 1/2	71 1/2	57 1/2	6.00/16	12/28	43.61	34.97	703	St	10	1.06-16.36	2	3.16-4.67
10	971-L	85 1/2	7 1/2	28 1/2	3624	56	84	17 1/2	17 1/2	132 1/2	71 1/2	57 1/2	6.00/16	12/28	43.61	34.97	703	St	10	1.06-16.36	2	3.16-4.67
11	981	85 1/2	7 1/2	28 1/2	3519	56	84	17 1/2	17 1/2	132 1/2	71 1/2	57 1/2	6.00/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
12	981-D	85 1/2	7 1/2	28 1/2	3685	56	84	17 1/2	17 1/2	132 1/2	71 1/2	57 1/2	6.00/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
13	981-L	85 1/2	7 1/2	28 1/2	3634	56	84	17 1/2	17 1/2	132 1/2	71 1/2	57 1/2	6.00/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
14	1811	81 1/2	11 1/2	11 1/2	4130	52	76	Fx	13 1/2	123	65 1/2	57 1/2	7.50/16	12/28	46.16	37.22	701	Op	10	1.06-16.36	2	3.16-4.67
15	1811-D	81 1/2	11 1/2	11 1/2	3955	52	76	Fx	13 1/2	123	65 1/2	57 1/2	7.50/16	12/28	46.16	37.22	701	Op	10	1.06-16.36	2	3.16-4.67
16	1871	81 1/2	11 1/2	11 1/2	3593	52	76	Fx	13 1/2	128	65 1/2	57 1/2	7.50/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
17	1871-D	81 1/2	11 1/2	11 1/2	3796	52	76	Fx	13 1/2	128	65 1/2	57 1/2	7.50/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
18	1881	81 1/2	11 1/2	11 1/2	4194	52	76	Fx	13 1/2	128	65 1/2	57 1/2	7.50/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
19	1881-D	81 1/2	11 1/2	11 1/2	4194	52	76	Fx	13 1/2	128	65 1/2	57 1/2	7.50/16	12/28	46.16	37.22	701	St	10	1.06-16.36	2	3.16-4.67
20	Fordson. FPM-12	80	12	19 1/2	5572	58	82			130 1/2	85	84 1/2	7.50/16	14/30	47.65	43.59	685	St	6	2.35-14.93	2	3.18-5.71
21	FPM-14	80	12	19 1/2	5544	58	82			130 1/2	85	84 1/2	7.50/16	14/30	47.65	43.59	685	St	6	1.91-13.84	2	2.74-5.12
22	FPM-U14	80	12	19 1/2	5158	58	82			130 1/2	85	84 1/2	7.50/16	14/30	47.65	43.59	685	St	6	1.91-13.84	2	2.74-5.12
23	FPM-72	88 1/2	24 1/2	24 1/2	5550					136	85	84 1/2	5.50/16	12/38					6	2.35-14.93	2	3.18-5.71
24	International Harvester																					
25	Farmall Cub	69 1/4	8 3/4	20	1600	40	56	22 1/2	Ad	99	48	63	4.00/12	8.3/24	10.75	10.08	575	Op	3	2.40-7.30	1	2.70
26	140	71	8 1/2	22	2720	40	68	18 1/2	Ad	107	56	82	5.00/15	9.5/24	24.27	22.18	666	Op	4	1.90-12.80	1	3.10
27	140HC	71 1/2	8 1/2	22	2670	48	68	18 1/2	Ad	115	61	89	4.00/19	9.5/36	24.00	22.00	667	Op	4	2.60-16.80	1	4.00
28	240	80	7 1/2	23 1/2	3340	48	90	18 1/2	Ad	123	80 1/2	88	5.00/15	11.2/36	32.22	28.87	667	Op	4	2.20-14.70	1	3.50
29	340	80	7 1/4	24	4250	48	92	18	Ad	122	83 1/2	91	5.00/15	12.4/36	36.12	32.68	685	Op	10	1.20-16.60	2	1.50-2.30
30	460	95	9	25 1/2	4970	48	93	18	Ad	139 1/2	83 1/2	95	5.50/16	12.4/38	51.63	47.24	672	Op	10	1.70-16.60	2	2.20-3.20
31	460D	95	9	25 1/2	5150	48	93	18	Ad	139 1/2	83 1/2	95	5.50/16	12.4/38	52.19	47.99	672	Op	10	1.70-16.60	2	2.20-3.20
32	460HC	100 1/2	12	34	5620	62	74	30	Ad	154	85 1/2	107	6.00/20	12.4/38	51.50	47.00	NT	Op	10	1.70-15.90	2	2.10-3.10
33	460DHC	100 1/2	12	34	5800	62	74	30	Ad	154	85 1/2	107	6.00/20	12.4/38	51.50	47.00	NT	Op	10	1.70-15.90	2	2.10-3.10
34	560	96	8 1/2	28 1/2	5790	50	94	18	Ad	141	84 1/2	99 1/2	6.00/18	13.6/38	65.25	59.47	671	Op	10	1.50-16.60	2	1.90-2.80
35	560D	96	8 1/2	28 1/2	5980	50	94	18	Ad	141	84 1/2	99 1/2	6.00/18	13.6/38	62.60	58.67	669	Op	10	1.50-16.60	2	1.90-2.80
36	560HC	100 1/2	12	34	6430	62	74	30	Ad	155	85 1/2	112	6.00/20	13.6/38	68.00	58.00	NT	Op	10	1.50-16.60	2	1.90-2.80
37	560DHC	100 1/2	12	34	6600	62	74	30	Ad	155	85 1/2	112	6.00/20	13.6/38	82.00	57.00	NT	Op	10	1.50-16.60	2	1.90-2.80
38	International Cub Le-Boy	62	7 1/4	14	1600	40	56	22 1/2	Ad	97	48	56	4.00/12	8.3/24	10.75	10.08	575	Op	3	2.40-7.30	1	2.70
39	140	71	8 1/2	22	2720	40	68	18 1/2	Ad	107	56	82	5.00/15	9.5/24	24.27	22.18	666	Op	4	1.90-12.80	1	3.10
40	240U	75	10 1/2	11 1/2	3140	48	76	18 1/2	Ad	116	63	56	5.50/16	12.4/24	32.24	28.91	668	Op	4	1.80-11.80	1	2.80
41	340U	73 1/2	9 1/2	11 1/2	3970	48	76	18	Ad	116	63	80	5.50/16	12.4/28	35.24	32.41	634	Op	10	1.20-16.10	2	1.50-2.20
42	460U	78 1/2	10 1/2	12 1/2	4410	48	76	18	Ad	128	64	61	6.00/16	13.6/28	51.64	48.15	674	Op	10	1.20-16.10	2	1.50-2.20
43	460DU	78 1/2	10 1/2	12 1/2	4590	48	76	18	Ad	128	64	61	6.00/16	13.6/28	52.43	48.16	673	Op	10	1.20-16.10	2	1.50-2.20
44	460DU	79 1/2	10 1/2	12 1/2	4710	48	93	18	Ad	132	63 1/2	65	6.00/16	12.4/38	51.64	48.15	674	Op	10	1.20-16.60	2	1.50-2.30
45	460DU	79 1/2	10 1/2	12 1/2	4890	48	93	18	Ad	132	63 1/2	65	6.00/16	12.4/38	52.43	48.16	673	Op	10	1.20-16.60	2	1.50-2.30
46	560	85 1/2	12	18 1/2	5700	58	70	18	Ad	146	74	95	6.50/18	16.9/30	65.00	59.00	NT	Op	10	1.40-16.20	2	1.90-2.70
47	560D	85 1/2	12	18 1/2	5980	58	70	18	Ad	146	74	95	6.50/18	16.9/30	62.00	58.00	NT	Op	10	1.40-16.20	2	1.90-2.70
48	660	85 1/2	12 1/2	15 1/2	7800	60	80	18 1/2	Ad	144	78	100 1/2	7.50/18	18.4/34	85.00	73.20	721	Op	10	1.50-16.50	2	1.90-2.80
49	660D	85 1/2	12 1/2	15 1/2	7880	60	80	18 1/2	Ad	144	78	100 1/2	7.50/18	18.4/34	82.90	74.30	715	Op	10	1.50-16.50	2	1.90-2.80
50	Massey-Ferguson MF-202 Ind.	75	9	13	2645	48	76	N	N	113 1/2	63 1/2	55	6.00/16	11/28			NT	St	6	1.23-13.49	2	

... WHEEL TYPE—continued

Make and Model	ENGINE				FUEL		BELT PULLEY										CAPACITIES					Line Number						
	Number of Cylinders—Bore and Stroke (in.)	Piston Disp. (Cu. In.)	R.P.M. at Governed Speed	Valve Arrangement	Number of Main Bearings	Diameter of Main Bearings	Standard	Optional	Ignition Make	Carburetor or Injector Pump Make	Air Cleaner Make	Governor Make	Oiling System Type	Cooling System Type	Clutch—Make and Type	Final Drive—Type	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)		Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Gears (Qts.)	Starting Method	
Ow. 134	4-3 1/2 x 3 1/2	134	2200	I	3	2 1/2	LP		Ow. 134	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	Ped	3 1/2	19 1/2	4	11 1/2	3	Ele	1	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	2	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	3	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17 1/4	4	11 1/2	11	Ele	4	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	19 1/4	4	11 1/2	3	Ele	5	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	Ped	3 1/2	17	4	11 1/2	3	Ele	6	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	Ped	3 1/2	17	4	11 1/2	3	Ele	7	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	8	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	9	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	10	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	11	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	12	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	13	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	14	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	15	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	16	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	17	
Ow. 172	4-3 1/2 x 3 1/2	172	2200	I	3	2 1/2	LP		Ow. 172	Zen	Don	N-P	P	Pu	N	IG	9	6 1/2	1298	AA	3 1/2	17	4	11 1/2	11	Ele	18	
Co. 134	4-3 1/2 x 3 1/2	134	1700	I	5	3	D		Co. 134	Sim	AD	Sim	P	Pu	Co. 134	DP	IG	8 1/2	6 1/2	3783	AA	3 1/2	17 1/2	7 1/4	64 1/2	(a)	Ele	20
Co. 134	4-3 1/2 x 3 1/2	134	1700	I	5	3	D		Co. 134	Sim	AD	Sim	P	Pu	Co. 134	DP	IG	8 1/2	6 1/2	3783	AA	3 1/2	17 1/2	7 1/4	64 1/2	(a)	Ele	21
Co. 134	4-3 1/2 x 3 1/2	134	1700	I	5	3	D		Co. 134	Sim	AD	Sim	P	Pu	Co. 134	DP	IG	8 1/2	6 1/2	3783	AA	3 1/2	17 1/2	7 1/4	64 1/2	(a)	Ele	22
Co. 134	4-3 1/2 x 3 1/2	134	1700	I	5	3	D		Co. 134	Sim	AD	Sim	P	Pu	Co. 134	DP	IG	8 1/2	6 1/2	3783	AA	3 1/2	17 1/2	7 1/4	64 1/2	(a)	Ele	23
Ow. C60	4-2 1/2 x 2 1/2	60	1800	L	3	1 1/2	G		Ow. C60	Don	D-U	Ow. C60	P	TS	A-R	SP	SG	7 1/2	4 1/2	1487	FK	2 1/2	7 1/2	3	1 1/2	H-E	24	
Ow. C123	4-3 1/2 x 4	123	1400	I	3	2 1/2	G		Ow. C123	Don	D-U	Ow. C123	P	Pu	A-R	SP	SG	8 1/2	6	1157	FK	3 1/2	11	5	3	Ele	25	
Ow. C123	4-3 1/2 x 4	123	1400	I	3	2 1/2	G		Ow. C123	Don	D-U	Ow. C123	P	Pu	A-R	SP	SG	8 1/2	6	1157	FK	3 1/2	11	5	3	Ele	26	
Ow. C123	4-3 1/2 x 4	123	2000	I	3	2 1/2	G		Ow. C123	Don	D-U	Ow. C123	P	Pu	A-R	SP	SG	7	5 1/2	1652	SA	3 1/2	16 1/2	5	20	N	27	
Ow. C135	4-3 1/2 x 4	135	2000	I	3	2 1/2	G		Ow. C135	Don	D-U	Ow. C135	P	Pu	O-R	SP	SG	11	7 1/2	1063	SA	3 1/2	15 1/2	5	40	N	28	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	29	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	30	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	31	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	32	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	33	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	34	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	35	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	36	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	37	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	38	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	39	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	40	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	41	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	42	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	43	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	44	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	45	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	46	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9	40	N	47	
Ow. D236	6-3 1/2 x 3	236	1800	I	4	2 1/2	G		Ow. D236	Don	D-U	Ow. D236	P	Pu	O-R	SP	SG	11	7 1/2	1059	SA	4 1/2	33	9				

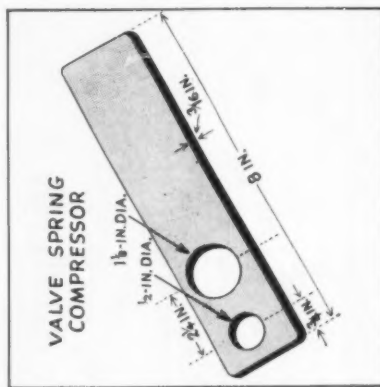
CAR and TRUCK shop kinks

\$25 for KINK of the month \$10 paid for other KINKS

Tool Removes Valve Springs Without Removing Engine Head
James Pogaletz, R.R. 3, Medford, Wisconsin

Kink of the Month

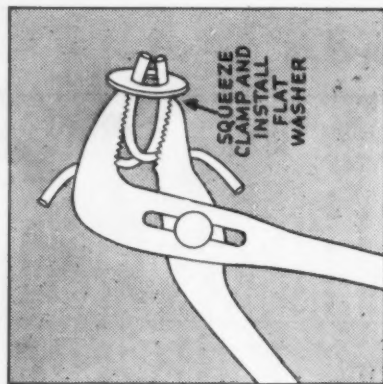
81. Here's a tool for replacing valve springs without removing the head on Chevy V-8's. Take the porcelain and electrode out of the old spark plug. Braze a male air chuck connector to the plug. Install it in cylinder with piston on top center. Apply 100 lbs. air. Remove rocker arm. Place tool over valve spring and small hole over rocker arm stud bolt. Turn nut. Compress spring.



Removing Spring Type Radiator Hose Clamps

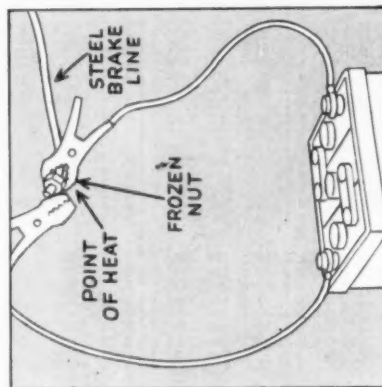
Arvid Gerken, 736 View Place Drive, Cincinnati 24, Ohio

82. Removing and replacing spring type radiator hose clamps can be done by using standard pliers and a 1/2 in. flat washer. Compress the tongs of the clamp with the pliers. Confine them by placing the washer over the tips. Release the pliers and the washer will hold clamp in an expanded attitude for removal and replacement.



Easy Way To Remove Rusted On Nut From Brake Hose
Donald Richman, Richman's Motor Service, Croydon, Pa.

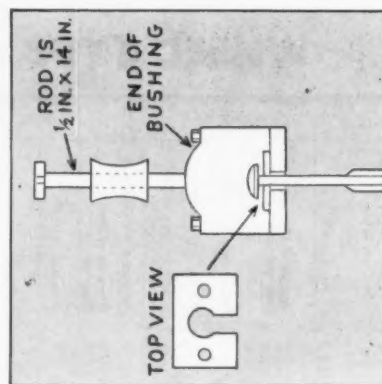
83. When replacing a brake hose sometimes the nut on the end of the steel line is rusted on and will not turn. We solve this by clamping on a battery clip to the steel line. The other clip is touched to the nut on the end. Current flows thru the nut on the end. Current flows thru the nut to the pipe with a direct short. The nut becomes hot, expands and breaks loose the rust.



Removing Stuck Valves

H. Josephs, P.O. Box 22, Gardenville, Pa.

84. Here is a gimmick to pull valves without causing damage. The end of a 1/2 in. thick rod is threaded for a nut. A sliding weight is mounted on this rod. The other end of the rod is welded to an old bushing. A plate is split to admit the valve stem and is drilled to fit the bolts on the bushing.



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- Complete protection against obsolescence
- Never an over-balanced stock... never misplaced "dead" inventory
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- More sales and a guaranteed profit on every sale

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1960 MODELS OF TRACTORS . . .

Line Number	TRACTOR MAKE AND MODEL	GENERAL						DRAW-BAR	OVERALL DIMENSIONS			TIRE SIZE (In.)		H.P. RATING		Nebraska Test Number	Forward Travel Speeds at Normal Governed Engine RPM with Standard Wheels		Reverse Travel Speeds at Normal Governed Engine RPM with Standard Wheels					
		Wheelbase (In.)	Minimum Turning Radius Outside (Ft.)	Ground Clearance (In.)	Shipping Weight with Rubber Tires (Lb.)		TREAD (In.)		Lateral Adjustment (In.)	Height Above Ground (In.)	Length (In.)	Width (In.)	Height - To Highest Point (In.)	Front	Rear		Belt	Drawbar	Power Take-Off	No. of Speeds	Range (MPH)	No. of Speeds	Range (MPH)	
					Minimum	Maximum	Minimum																	Maximum
1	Michigan	180	100	25	14	30750	83	83	28	234	107	111	23.50/25	23.50/25	185.00			4	0-27.0	4	0-27.0			
2		280	106	27	15	48600	94	96	28	255	123	128	29.5/25	29.5/25	282.00			4	0-28.0	4	0-28.0			
3		122	29	14	66800	106	106	106	28	288	136	133	29.50/20	29.50/20				4	0-27.4	4	0-27.4			
4		480	138	35	19	92000	106	112	33	323	146	149	35.50/33	35.50/33				4	0-28.6	4	0-28.6			
5	Minneapolis-Moline Uni-L	104	11	12	3922	83	83	83	143	105	82	11/24	7.50/18			NT	3	2.10-10.10	1	2.00				
6	335-UII	79	9	18	3070	48	76	Ad	189	113	58	5.50/16	10/24	35.07	31.41	624	Op	5	2.72-15.09	1	4.17			
7	335-U	79	8	23	3268	48	76	Ad	20	121	74	5.50/16	12/40/38	35.07	31.41	624	Op	5	3.66-20.26	1	5.60			
8	335-E	85	10	22	3538	48	76	Ad	20	126	74	5.50/16	12/40/38	35.07	31.41	624	Op	5	3.66-20.26	1	5.60			
9	335-N	78	7	23	3275	48	76	Ad	20	119	74	5.50/16	12/40/38	35.07	31.41	624	Op	5	3.66-20.26	1	5.60			
10	335-Ind.	78	7	23	3355	56	76	Ad	19	113	69	6.00/16	10/24	40.00	35.00	NT	Op	5	3.48-19.36	1	5.34			
11	445-UII	81	10	20	3450	56	84	Ad	12	121	69	5.50/16	13/60/28	44.19	40.24	579	Op	5	2.69-14.88	1	4.11			
12	445-UII-D	81	10	20	3550	56	84	Ad	15	121	69	5.50/16	13/60/28	44.19	40.00	NT	Op	5	2.66-14.70	1	4.06			
13	445-U	86	8	25	3530	56	88	Ad	14	130	82	5.50/16	13/60/38	44.19	40.31	578	Op	5	2.78-15.40	1	4.26			
14	445-E	93	11	25	3830	56	88	Ad	14	137	82	5.50/16	13/60/38	44.19	40.31	578	Op	5	2.78-15.40	1	4.26			
15	445-N	86	8	25	3650	56	88	Ad	14	128	82	5.50/16	13/60/38	44.19	40.31	578	Op	5	2.78-15.40	1	4.26			
16	445-UD	86	8	25	3630	56	88	Ad	14	130	82	5.50/16	11/38	44.00	40.00	NT	Op	5	3.14-17.39	1	4.81			
17	445-ED	93	11	25	3930	56	88	Ad	14	137	82	5.50/16	11/38	44.00	40.00	NT	Op	5	3.14-17.39	1	4.81			
18	445-ND	86	8	25	3750	56	88	Ad	14	128	82	5.50/16	11/38	44.00	40.00	NT	Op	5	3.14-17.39	1	4.81			
19	445-Ind.	77	10	13	3725	56	84	Ad	18	118	69	6.00/16	12/28	44.00	40.00	NT	Op	5	2.69-14.88	1	4.11			
20	445-Ind. D	77	10	13	3825	56	84	Ad	18	118	69	6.00/16	12/28	44.00	40.00	NT	Op	5	2.66-14.70	1	4.06			
21	5 Star Std.	90	16	12	6070	56	87	Ad	16	134	73	7.00/16	15/30	57.00	52.00	NT	Op	10	2.57-15.71	2	3.93-4.34			
22	5 Star U	94	18	25	5570	56	88	Ad	17	140	79	7.00/16	13/60/38	57.16	52.06	651	Op	10	2.65-16.21	2	4.05-4.48			
23	5 Star E	101	22	22	5780	56	88	Ad	17	147	79	7.00/16	13/60/38	57.16	52.06	651	Op	10	2.65-16.21	2	4.05-4.48			
24	5 Star N	93	18	25	5450	56	88	Ad	17	137	79	7.00/16	13/60/38	57.16	52.06	651	Op	10	2.65-16.21	2	4.05-4.48			
25	5 Star UD	94	18	25	5670	56	88	Ad	17	140	79	7.00/16	13/60/38	57.24	51.80	652	Op	10	2.65-16.21	2	4.05-4.48			
26	5 Star ED	101	22	22	6080	56	88	Ad	17	147	79	7.00/16	13/60/38	57.24	51.80	652	Op	10	2.65-16.21	2	4.05-4.48			
27	5 Star ND	93	18	25	5750	56	88	Ad	17	137	79	7.00/16	13/60/38	57.84	51.80	652	Op	10	2.65-16.21	2	4.05-4.48			
28	5 Star Ind.	90	16	17	6160	64	69	Ad	13	81	70	8.25/20	15/26	57.00	50.00	NT	Op	5	3.00-16.82	1	4.59			
29	5 Star Ind. D	90	16	17	6460	64	69	Ad	13	81	70	8.25/20	15/26	57.00	50.00	NT	Op	5	3.00-16.82	1	4.59			
30	GB	82	14	14	6525	66	66	Ad	25	137	83	7.50/16	15/34	68.50	61.45	547	Op	5	2.70-14.70	1	2.10			
31	GBD	96	16	14	7400	66	66	Ad	25	151	83	7.50/16	15/34	71.50	63.50	NT	Op	5	3.10-17.00	1	2.40			
32	UTI Ind.	79	16	17	6010	66	70	Ad	15	163	84	8.25/20	15/26	50.38	45.43	NT	Op	5	2.40-13.50	1	1.90			
33	UTID Ind.	79	16	17	6310	66	70	Ad	15	163	84	8.25/20	15/26	45.00	40.00	NT	Op	5	2.40-13.50	1	1.90			
34	UTID Ind.	88	17	17	6310	66	70	Ad	15	163	84	8.25/20	15/26	50.38	45.43	NT	Op	5	2.40-13.50	1	1.90			
35	UTID Ind.	88	17	17	6310	66	70	Ad	15	163	84	8.25/20	15/26	45.00	40.00	NT	Op	5	2.40-13.50	1	1.90			
36	Jet Star	96	18	20	3260	56	84	Ad	12	125	70	6.00/16	12/28	48.00	44.00	NT	Op	5	1.80-13.50	1	1.90			
37	4 Star	96	18	22	4700	56	88	Ad	12	131	82	7.00/16	13/60/38	48.00	44.00	NT	Op	5	1.80-13.50	1	1.90			
38	4 Star Super	93	18	22	4700	56	88	Ad	12	138	82	7.00/16	13/60/38	48.00	44.00	NT	Op	5	1.80-13.50	1	1.90			
39	M5	94	18	22	5780	60	88	Ad	14	147	79	7.00/16	13/60/38	64.50	59.00	NT	Op	5	1.80-16.79	2	2.43-4.84			
40	M5	101	22	22	5780	60	88	Ad	14	147	79	7.00/16	13/60/38	64.50	59.00	NT	Op	5	1.80-16.79	2	2.43-4.84			
41	M5	93	18	22	5780	60	88	Ad	14	147	79	7.00/16	13/60/38	64.50	59.00	NT	Op	5	1.80-16.79	2	2.43-4.84			
42	GVI	96	18	15	7830	54	64	Ad	15	150	82	7.50/16	15/34	61.00	72.00	NT	Op	5	3.10-17.00	1	2.40			
43																								
44	Oliver Super 55 HC	73	10	14	3050	48	76	Ad	120	66	53	5.50/16	10/28	35.88	30.75	524	Op	6	1.61-12.56	2	2.00-4.17			
45	Super 55D	73	10	14	3200	48	76	Ad	120	66	53	5.50/16	10/28	34.09	28.97	526	Op	6	1.61-12.56	2	2.00-4.17			
46	RC Super 66HC	86	8	18	2886	60	88	Ad	134	80	73	5.50/15	9/38	35.54	29.60	541	Op	6	1.88-9.54	2	2.15-3.70			
47	RC Super 66D	86	8	18	3026	60	88	Ad	134	80	73	5.50/15	9/38	35.54	29.60	544	Op	6	1.88-9.54	2	2.15-3.70			
48	RC Super 77HC	90	9	18	4226	60	92	Ad	139	80	73	5.50/15	11/38	46.18	40.18	542	Op	6	2.48-11.53	2	2.59-4.52			
49	Ind. Super 77HC	81	12	13	4346	60	92	Ad	133	79	70	7.00/20	12/20/24	45.94	40.04	543	Op	6	1.97-15.78	2	2.07-3.61			
50	RC Super 77D	90	9	18	4346	60	92	Ad	133	79	70	7.00/20	12/20/24	45.94	40.04	543	Op	6	1.97-15.78	2	2.07-3.61			
51	Ind. Super 77D	81	12	13	4346	60	92	Ad	133	79	70	7.00/20	12/20/24	45.94	40.04	543	Op	6	1.97-15.78	2	2.07-3.61			
52	RC Super 88HC	93	9	18	5000	60	92	Ad	143	80	73	6.00/16	12/38	58.08	49.81	525	Op	6	2.50-11.05	2	2.56-4.50			
53	Ind. Super 88HC	82	12	12	5100	60	92	Ad	135	81	70	7.00/20	13/20/24	55.63	49.58	527	Op	6	2.01-16.05	2	2.06-3.54			
54	RC Super 88D	93	9	18	5100	60	92	Ad	143	80	73	6.00/16	12/38	58.08	49.81	525	Op	6	2.50-11.05	2	2.56-4.50			
55	Ind. Super 88D	82	12	12	5100	60	92	Ad	135	81	70	7.00/20	13/20/24	55.63	49.58	527	Op	6	2.01-16.05	2	2.06-3.54			
56	550HC	73	10	14	3100	48	76	Ad	120	66	53	5.50/16	10/28	35.88	30.75	524	Op	6	1.61-12.56	2	2.00-4.17			
57	RC 770HC	92	9	18	4620	60	92	Ad	141	80	73	5.50/16	12/40/38	51.63	45.05	648	Op	6	1.64-11.04	2	2.48-4.33			
58	RC 770DSL	92	9	18	4620	60	92	Ad	141	80	73	5.50/16	12/40/38	51.63	45.05	648	Op	6	1.64-11.04	2	2.48-4.33			
59	RC 880HC	94																						

... WHEEL TYPE—concluded

Make and Model	ENGINE				FUEL		Ignition Make	Carburetor or Injector Pump Make	Air Cleaner Make	Governor Make	Oiling System Type	Cooling System Type	Clutch—Make and Type	Final Drive—Type	BELT PULLEY		CAPACITIES					Starting Method	Line Number					
	Number of Cylinders—Bore and Stroke (In.)	Piston Dia. (Cu. In.)	R.P.M. at Governed Speed	Valve Arrangement	Number of Main Bearings	Diameter of Main Bearings									Standard	Optional	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)			Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts.)	
Cum. JT6B1	6-4 1/2 x 5	401	2200	7	3 1/2	O	N	Cum			P	Pu	Cla.	TC	IG			DA	55	14	6	10	(a)	Ele	1			
Cum. NT6B1	6-5 1/2 x 6	743	2100	7	3	O	N	Cum			P	Pu	Cla.	TC	IG			DA	80	14	6	24	(a)	Ele	2			
Cum. NF76B1	6-5 1/2 x 6	743	2300	7	3	O	N	Cum			P	Pu	Cla.	TC	IG			DA	120	14	6	24	(a)	Ele	3			
Cum. VT12	12-5 1/2 x 8	1486	2100	7	7	O	N	Cum			P	Pu	Cla.	TC	IG			DA	200	14	6	24	(a)	Ele	4			
Ow. V206B	4-3 1/2 x 4	206	1550	1	2	G	DR	Mar	Don	Ow	P	Pu	Ow	SG			FO	4 1/2	14	6	10	(a)	Ele	5				
Ow. 165A	4-3 1/2 x 4	165	1600	1	3	(b)	LP	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1420	Ad	2 1/2	14	6	24	(a)	Ele	6			
Ow. 165A	4-3 1/2 x 4	165	1600	1	3	(b)	LP	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1420	Ad	2 1/2	14	6	24	(a)	Ele	7			
Ow. 165A	4-3 1/2 x 4	165	1600	1	3	(b)	LP	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1420	Ad	2 1/2	14	6	24	(a)	Ele	8			
Ow. 165A	4-3 1/2 x 4	165	1600	1	3	(b)	LP	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1420	Ad	2 1/2	14	6	24	(a)	Ele	9			
Ow. 206H	4-3 1/2 x 5	206	1550	1	3	(b)	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1800	FK	2 1/4	14	6	24	(a)	Ele	10			
Ow. D206	4-3 1/2 x 5	206	1750	1	3	(b)	O	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1660	Ad	3 1/4	14	6	32	(a)	Ele	11			
Ow. 206H	4-3 1/2 x 5	206	1550	1	3	(b)	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1470	Ad	3 1/4	14	6	32	(a)	Ele	12			
Ow. 206H	4-3 1/2 x 5	206	1550	1	3	(b)	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1470	Ad	3 1/4	14	6	32	(a)	Ele	13			
Ow. 206H	4-3 1/2 x 5	206	1550	1	3	(b)	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1470	Ad	3 1/4	14	6	32	(a)	Ele	14			
Ow. D206	4-3 1/2 x 5	206	1750	1	3	(b)	O	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1660	Ad	3 1/4	14	6	32	(a)	Ele	15			
Ow. D206	4-3 1/2 x 5	206	1750	1	3	(b)	O	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1660	Ad	3 1/4	14	6	32	(a)	Ele	16			
Ow. D206	4-3 1/2 x 5	206	1750	1	3	(b)	O	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1660	Ad	3 1/4	14	6	32	(a)	Ele	17			
Ow. 206H	4-3 1/2 x 5	206	1550	1	3	(b)	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1470	Ad	3 1/4	14	6	32	(a)	Ele	18			
Ow. D206	4-3 1/2 x 5	206	1750	1	3	(b)	O	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1660	Ad	3 1/4	14	6	32	(a)	Ele	19			
Ow. 263E	4-4 1/2 x 5	263	1500	1	3	2 1/2	G	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1090	FK	3 1/2	14	6	32	(a)	Ele	20		
Ow. D336	4-4 1/2 x 5	336	1450	1	3	2 1/2	G	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1090	Ad	3 1/2	14	6	32	(a)	Ele	21			
Ow. 263E	4-4 1/2 x 5	263	1500	1	3	2 1/2	G	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1090	FK	3 1/2	14	6	32	(a)	Ele	22		
Ow. 263E	4-4 1/2 x 5	263	1500	1	3	2 1/2	G	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1090	Ad	3 1/2	14	6	32	(a)	Ele	23		
Ow. 263E	4-4 1/2 x 5	263	1500	1	3	2 1/2	G	LP, TF	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1090	Ad	3 1/2	14	6	32	(a)	Ele	24		
Ow. D336	4-4 1/2 x 5	336	1450	1	3	2 1/2	G	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1090	Ad	3 1/2	14	6	32	(a)	Ele	25			
Ow. D336	4-4 1/2 x 5	336	1450	1	3	2 1/2	G	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1090	Ad	3 1/2	14	6	32	(a)	Ele	26			
Ow. D336	4-4 1/2 x 5	336	1450	1	3	2 1/2	G	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1090	Ad	3 1/2	14	6	32	(a)	Ele	27			
Ow. 263E	4-4 1/2 x 5	263	1500	1	3	2 1/2	G	LP	DR	Mar	Don	Nov	P	Pu	Roc	8 1/2	6 1/2	1090	Ad	3 1/2	14	6	32	(a)	Ele	28		
Ow. D336	4-4 1/2 x 5	336	1450	1	3	2 1/2	G	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	1090	Ad	3 1/2	14	6	32	(a)	Ele	29			
Ow. 403C	4-4 1/2 x 5	403	1300	1	3	2 1/2	G	LP, TF	DR	Mar	Don	Ow	P	Pu	TD	DP	SG	18	7	741	FK	12	29	9	52	(a)	Ele	30
Ow. D425	4-4 1/2 x 5	425	1500	1	4	2 1/2	G	N	Bos	Don	Bos	P	Pu	TD	DP	SG	16	7	741	FK	12	29	14	52	(a)	Ele	31	
Ow. 263B	4-4 1/2 x 5	263	1300	1	3	2 1/2	G	DR	Mar	Uni	Ow	P	Pu	Roc	8 1/2	6 1/2	741	FK	8	21	9	52	(a)	Ele	32			
Ow. D263	4-4 1/2 x 5	263	1300	1	3	2 1/2	G	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	741	FK	8	21	15	52	(a)	Ele	33			
Ow. 263B	4-4 1/2 x 5	263	1300	1	3	2 1/2	G	DR	Mar	Uni	Ow	P	Pu	Roc	8 1/2	6 1/2	741	FK	8	21	9	54	(a)	Ele	34			
Ow. D263	4-4 1/2 x 5	263	1300	1	3	2 1/2	G	N	Bos	Don	Bos	P	Pu	Roc	8 1/2	6 1/2	741	FK	8	21	15	54	(a)	Ele	35			
Ow. 206	4-3 1/2 x 5	206	1900	1	3	(b)	G	LP	DR	Mar	Nel	P	Pu	Roc	DP	SG	N	DA	3 1/2	14	6	32	(a)	Ele	36			
Ow. 206	4-3 1/2 x 5	206	1900	1	3	(b)	G	LP	DR	Mar	Nel	P	Pu	Roc	DP	SG	8 1/2	6 1/2	1660	DA	3 1/2	17	6	40	(a)	Ele	37	
Ow. 206	4-3 1/2 x 5	206	1900	1	3	(b)	G	LP	DR	Mar	Nel	P	Pu	Roc	DP	SG	8 1/2	6 1/2	1660	DA	3 1/2	17	6	40	(a)	Ele	38	
Ow. 336	4-4 1/2 x 5	336	1650	1	3	2 1/2	G	O, LP				Pu		SP		12	7	1090		5 1/2	22	1	56	(a)	Ele	39		
Ow. 336	4-4 1/2 x 5	336	1650	1	3	2 1/2	G	O, LP				Pu		SP		12	7	1090		5 1/2	22	1	56	(a)	Ele	40		
Ow. 336	4-4 1/2 x 5	336	1650	1	3	2 1/2	G	O, LP				Pu		SP		12	7	1090		5 1/2	22	1	56	(a)	Ele	41		
Ow. 425	4-4 1/2 x 5	425	1650	1	4	2 1/2	G	O, LP		Nel	P	Pu	TD	DP	SG	8 1/2	6 1/2	1090	FK	12	29	14	32	(a)	Ele	42		
Ow. 55HC	4-3 1/2 x 3 1/2	144	1750	1	3	2 1/2	G	DR	Mar	Don	Ow	PS	Pu	Au	SP	SG	9	8 1/2	1319	FK	3 1/2	13	4	20	(a)	Ele	43	
Ow. 55D	4-3 1/2 x 3 1/2	144	1750	1	3	2 1/2	G	DR	Mar	Don	Ow	PS	Pu	BB	SP	SG	9	8 1/2	1319	FK	3 1/2	13	4	20	(a)	Ele	44	
Ow. 60HC	4-3 1/2 x 3 1/2	144	1750	1	3	2 1/2	G	DR	Mar	Don	Ow	PS	Pu	BB	SP	SG	9	8 1/2	1319	FK	3 1/2	13	4	20	(a)	Ele	45	
Ow. 66D	6-3 1/2 x 3 1/2	216	1600	1	4	2 1/2	G	DR	M-Z	Don	Ow	PS	Pu	BB	SP	SG	11 1/2	7 1/4	1232	SA	3 1/2	12	4	18	(a)	Ele	46	
Ow. 77HC	6-3 1/2 x 3 1/2	216	1600	1	4	2 1/2	G	DR	M-Z	Don	Ow	PS	Pu	BB	SP	SG	11 1/2	7 1/4	992	SA	4 1/2	18	5	18	(a)	Ele	47	
Ow. 77D	6-3 1/2 x 3 1/2	216	1600	1	4	2 1/2	G	N	Bos	Don	Bos	Pu	BB	SP	SG	11 1/2	7 1/4	992	SA	4 1/2	18	5	18	(a)	Ele	48		
Ow. 77D	6-3 1/2 x 3 1/2	216	1600	1	4	2 1/2	G	N	Bos	Don	Bos	Pu	BB	SP	SG	11 1/2	7 1/4	992	SA	4 1/2	18	5	18	(a)	Ele	49		
Ow. 80HC	6-3 1/2 x 3 1/2	265	1600	1	4	2 1/2	G	DR	M-Z	Don	Ow	PS	Pu	BB	SP	SG	11 1/2	7 1/4	992	SA	4 1/2	18	5	18	(a)	Ele	50	
Ow. 88HC	6-3 1/2 x 3 1/2	265	1600	1	4	2 1/2	G	DR	M-Z	Don	Ow	PS	Pu	BB	SP	SG	11 1/2	7 1/4	992	SA	4 1/2	18	5	18	(a)	Ele	51	
Ow. 88D	6-3 1/2 x 3 1/2	265	1600	1	4	2 1/2	G	DR	M-Z	Don	Ow	PS	Pu	BB	SP	SG	11 1/2	7 1/4	992	SA	4 1/2	18	5	18	(a)	Ele	52	
Ow. 88D	6-3 1/2 x 3 1/2	265	1600	1	4	2 1/2	G	N	Bos	Don	Bos	PS	Pu	BB	SP	SG	11 1/2	7 1/4	992	SA	4 1/2	18	5	18	(a)	Ele	53	
Conf. F140	4-3 1/2 x 4 1/2	140	1800	L	3	2 1/2																						

Good Shopkeeping Continued from page 35

Bay	Width in feet
Wash	16-17
Lubrication	12-14
Wheel alignment	
Surface type	12-15
Pit type	15-17
Body Work	
Minor	14
Major	16
Paint	
Minor	12-14
Booth	18-22

Service bays providing the foregoing dimensions may at first glance appear to be more than adequate. However, if we are cautious in our thinking, and consider the following facts, we soon realize that the space allowances shown are just exactly what is needed in the service department.

The psychological effect on the mechanic is very bad when he is crowded into a small working space. It often leads to "slipshod" work. It creates comebacks and customer dissatisfaction. A "hemmed in" effect creates a "feeling" of too little space for effective work. Crowding leaves the cleanest mechanical work bay with the appearance of "messiness".

Mechanic turnover rate is directly affected by the working conditions in the shop. Mechanics prefer to work in a well organized spacious shop rather than in cramped quarters. Well spaced service bays present a very good picture to the customers. Customers can easily enter and be more readily served. The woman in particular doesn't become offended by an "alley garage" atmosphere. The potentials for increased service sales are enhanced by the environment of well managed orderliness.

The recommended width for aisles leading to 90 degree stalls is 25 feet. Stalls at 90 degrees provide the most satisfactory layout. Under all conditions one aisle should service two rows of cars, this makes the best use of space. Where it is necessary to use stalls at 60 degrees, the aisle should be 21 feet minimum. For 45 degree stalls the aisle should be 16 feet minimum. With 90 degree stalls, a building can be shorter and more efficiently arranged.

Cars backing out of stalls can go either way while with 45 or 60 degree parking, cars can move in only one direction. When stalls are laid out at 90 degrees to the aisle, the length of the service area can be shorter than with 60 degree and 45 degree stalls. Shorter aisles permit efficient handling of all internal traffic.

In most service areas an overhead clearance of at least 10 ft. 6 inches is desirable. This will provide room for lifts and to allow space for a good display of merchandising signs and background in areas visited by customers.

The service entrance should be provided with a wide apron between the entrance and the street. Make the entrance wide and easy to get through. The customer reception area should be well laid out, decorated, lighted and manned to make a favorable "first impression" on the customer. Freshly painted walls and clean floors and a bright clean look will give the customer a feeling of confidence in your shop or service department.

Signs and displays will help merchandise service, parts and accessories. The reception area planned for straight-through progressive traffic flow permits fast handling.

The Service Station

Tomorrow's service stations are being conceived today. The demands of today's customers influence how the service station of tomorrow will look. Services and products are being determined by the same customers. The effect of this will shape the overall service station operation in the years to come. The design of the service station will evolve to fit the needs of customers and their automobiles.

There are two major facets to good service station operation. They are management and service skills. Men must be trained in management. It is not enough to know about modern service skills. It is also important to train the mechanic on proper methods of chassis lubrication, air cleaner service, wheel balancing, tire repair, radiator, service, spark plug service and tune-

ups. These are a "must" for the modern service station.

Trends in service stations will be influenced by initial costs and operating cost. Also products and services will play a big factor in the trends. Ordinances and regulations and competitive factors, such as corporate identity and image, devices or facilities for the promotion of sales and services will influence the design of service stations. Changes in the design and requirements of land vehicles all must be considered in designing service stations.

Lighting is extremely important to the modern service station. All stations should be lighted efficiently and should attract customer attention. Careful consideration should be given not only to the type of light and operating light level, but also to the daytime appearance of the poles and luminaires. They can enhance the modern, spic-and-span decor of the stations.

Service station operators can also increase income easily and quickly by introducing engine steam cleaning service. Beside cleaning car and truck engines the serviceman can clean fifth wheels, running gear, chassis and trailer parts for nearby fleet operators as well as trucks in transit. Steam cleaning is easy to sell.

An economic boom is in sight for the service station that is offering many kinds of service and sales. It has been predicted that in a decade there will be 86 million autos on the road. They will be using over 82 billion gallons of gasoline a year. By 1970 there will be a 20 per cent increase in automobiles. Service stations should build profits by making service really pay off.

Tuneups, front-end alignment, light repair work and wheel balancing should be offered. In addition to tune-ups other profitable repair work should be offered such as transmission and brake repair, engine overhaul and muffler and tailpipe installation. Small engine re-

Continued on page 62

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or
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freeze



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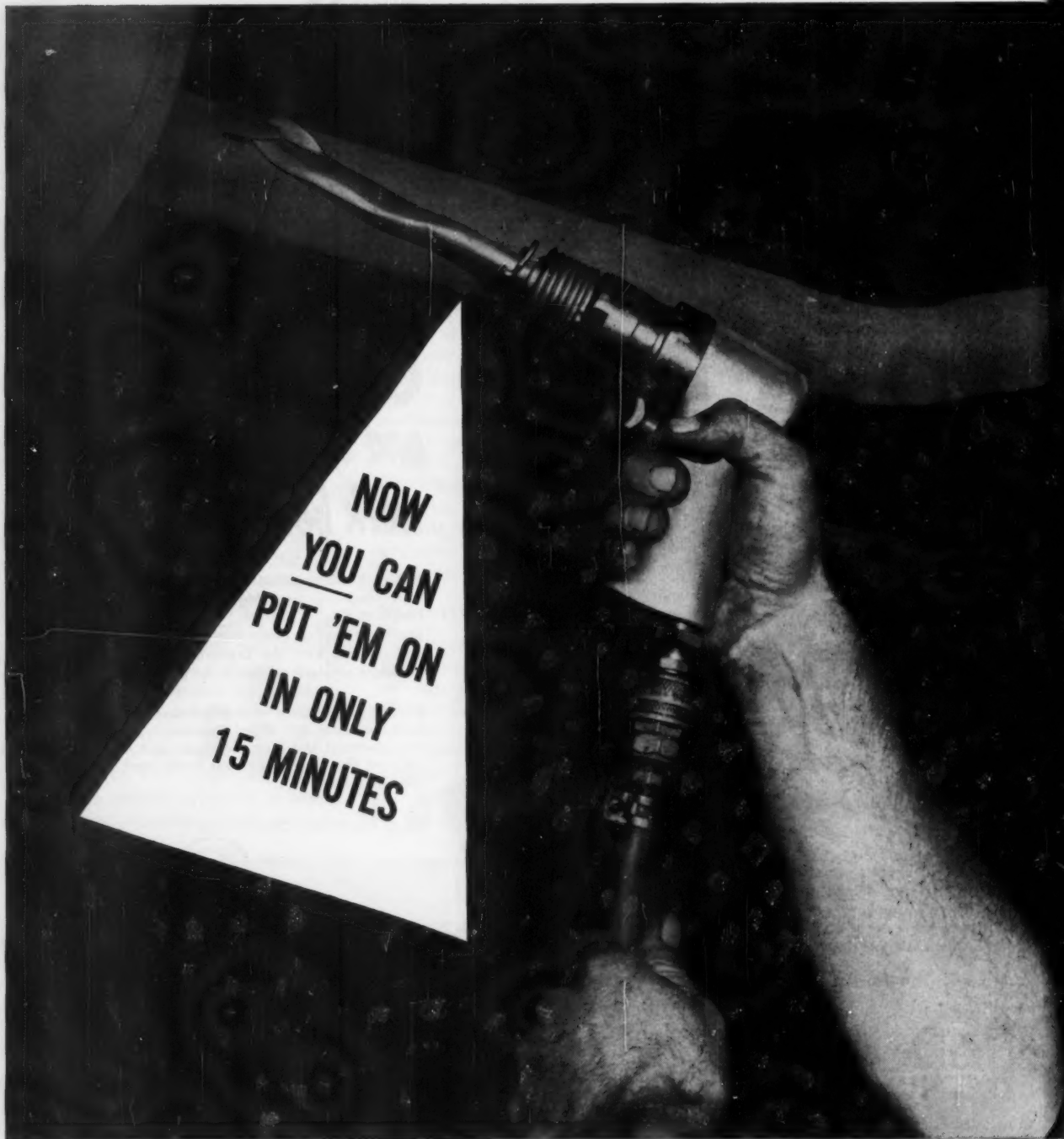
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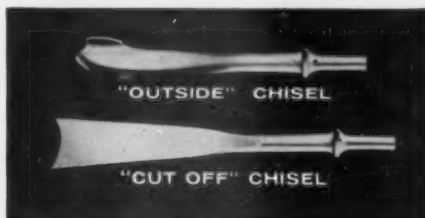
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Good Shopkeeping Continued from page 58

pair work is also very profitable work to have at the service stations. Investment and training in these no longer "extra" repair services will pay off in increased profits.

Tools and Equipment

Today's automotive customers are attracted to the car dealer or repair shop that offers the best in competitive products and services. These services are offered in establishments that are not only eye catching but well equipped. These dealerships or garages must be operated with the highest degree of efficiency. Efficiency means having modern equipment and well trained mechanics and employees.

Once you attract customers inside your place you must continue to impress them. The appearance of a clean, neat and well lighted service department immediately impresses them on the wisdom of their decision.

Arrangement of Departments

It is important to group equipment departmentally. Lubrication department should take about 10 per cent of the space. The quick service department should be about

28 per cent of the floor space. Major repairs should take up about 32 per cent of the allotted space. Wash department, 7 per cent and the body and paint 23 per cent.

To do work quickly and accurately, special equipment should be used. Units designed for engine analysis, wheel alignment, brake jobs, etc. should be where the customers can see them. The lubricating area can be a drive through or a stall type operation. This department must use lifts. Ceiling type equipment can be used. Island-type equipment has the advantage of being self contained. It minimizes the need for extra storage space for lubricant.

A straight approach should be provided to the front end aligning equipment. The car should be elevated in relation to the mechanic. This can be done either by the use of pit or by means of a short ramp and platform. For ramp set up, provided an extra long stall.

Many dealerships use a control tower. If the size of your operation does not warrant a control tower you still need to provide scheduling and planning of customer work. Neat and accurate records must be maintained. Hand and hand with

scheduling goes the maintenance of a controlled and even flow of labor and services done to customers' cars. Work is smooth-functioning when a service specialist enlists the aid of sound planning and follow-up. Adequate space, integrated departmental layout, proper number of lifts, work stalls, and tools and equipment all play prominent roles in good work flow.

To reach peak efficiency in good shopkeeping, modern equipment and tools are essential. The properly equipped service department, service station or independent repair shop gains in many ways. It gains in time saved, in work space saved, quick deliveries make room for more work. Accurate diagnosis means higher quality work. Lower costs means higher profits.

Body Shop Profitable

It is always profitable to operate a body shop in conjunction with the dealership or the repair shop operations. The service department and the body shop should work cooperatively. For example when a car with body damage comes in for mechanical work, the driver should be courteously reminded of the body shop facilities and vice-versa. The body shop may be operated under the same roof of the main building or may be in a separate building.



Scenes from the recent Phila. Auto Show held at Convention Hall in the City of Brotherly Love. Starting from left in the 1st photo are Jack Montgomery, technical editor of MOTOR AGE; John McCuen, III, Auto Equipment & Service Co.; Charles A. Bott, president of the Philadelphia Automobile Trade Association (sponsor of the Show) and Terrence McCabe, service editor of MOTOR AGE.

Photo center: Miss Julie C. Driscoll, Executive Secretary of the PATA, at the Auto Show Press Preview with left, Mrs. Mary Yale Einselen.

Photo at right: President of PATA, Charles A. Bott, left, is shown discussing highlights of the Auto Show with Guy van den Broek, center, Director of Public Relations for Foreign Missions, Paris, France and MOTOR AGE'S News Editor, Bill Montgomery.

FREE DIVIDENDS... WITH NEW

AIRTEX DO FUEL PUMP PROGRAM



Here's The Greatest Fuel Pump Sales Pageant Yet

Feast your eyes on these AIRTEX Dividends... Sparkling... Valuable... Honest to goodness values. How do you get them? Simple. Order the AIRTEX DO PAKage of eight fuel pumps; the stock that you need. Each assortment is a normal 8 week stock which you probably will use in less time... this proves DO stands for Dividends with Opportunities. With the DO assortment you'll receive your choice of these handsome, nationally advertised Dividends. Choose the Corning Ware Royal Family Set or the 5-Transistor Radio or the 1/4" Skil Power Drill. You pay lowest price for 7 pumps and special

promotional price for the extra pump, plus Dividend; when you sell the extra pump, the Dividend is yours free.

The DO PAKage contains the finest fuel pumps available to assure you of top sales OPPORTUNITIES. Exclusive AIRTEX features are built into every AIRTEX Fuel Pump to give your customers long-lasting, care-free performance.

FOR BEST PERFORMANCE / TROUBLE FREE VALUE / INSTALL A NEW FUEL PUMP / INSTALL

AIRTEX
 AIRTEX AUTOMOTIVE DIVISION
 AIRTEX PRODUCTS,
 Fairfield, Illinois
 FUEL PUMPS • WATER PUMPS



New Products Shopping Center

Spark Plug Viewer

Permits close examination of the interior of insulator nose

Champion Spark Plug Company: The new Champion spark plug viewer with a hood molded of Tenite butyrate plastic permits it is said close examination of the entire interior of the insulator nose of a spark plug. In one convenient hand tool it combines a light source and a magnifying lens. Thus enabling mechanics to spot fouled, chipped or cracked areas inside the plug and to check the condition of electrode sparking surfaces. The butyrate hood, which directs the light into the spark plug, also helps protect the magnifying lens

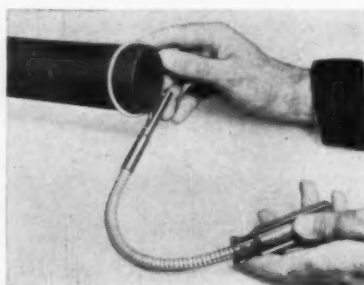


and the light bulb from damage company states. The viewer is powered by two flashlight batteries housed in the metal handle. Write: Sales Department, Champion Spark Plug Co., 900 Upton Ave., Toledo 1, Ohio, or 'phone JE 6-3711.

Hose Spring-Clamp Tool

Handles spring clamps ranging in many sizes

United Motors Service, Division of General Motors: A new hose spring-clamp tool and kit assortment of water outlet gaskets is now available. Tool was designed to handle spring clamps ranging in size from heater hose through radiator hose diameters. It fea-



tures a flexible shaft to permit reaching spring clamp around any engine part or accessory which might otherwise interfere. Water outlet gaskets for replacement jobs are contained in 22 envelopes. Write: Gordon S. Miller, Administrator of Public Relations & Advertising, United Motors Service, General Motors, General Motors Bldg., Detroit 2, Mich., or 'phone TR 3-7200.

Car Washer

Cleans and glazes motor, renews upholstery

Big Four Industries, Inc.: Power-Spray Car Washer, a motor

cleaner-glazer and upholstery renewer is being marketed. As a



car washer the unit provides 1-2-3 wash and rinse cycle. The Heavy Duty model also cleans buildings, trucks, motors, lubrication lifts, rest rooms, tractor bodies, gas pumps, and driveways. Write: Richard E. Calk, Customer Service Mgr., Big Four Industries, Inc., Box 444, Foster, Ohio, or 'phone NO 5-8341.

White Rubbing Compound

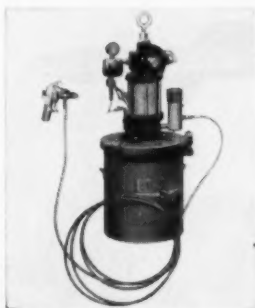
For rubbing and polishing lacquer finishes

E. I. Du Pont de Nemours & Company: A white rubbing compound suited for rubbing and polishing lacquer finishes in pastel and off-white colors is being introduced. Designated 101 Lacquer Rubbing Compound (VZ-5677 White), the new material is applied by hand. The white compound is formulated to impart high luster to acrylic and nitrocellulose lacquer surfaces, but eliminates the possibility of visible residue left in the crevices

after application on light-colored finishes, it was stated. Write: *E. I. Du Pont de Nemours & Co., Room D-8167, 1007 Market St., Wilmington 98, Del., or 'phone PR 4-5838.*

Airless Spray Painting

Minimum cost unit now available



The DeVilbiss Company: The versatility of airless spray painting, can be obtained with a minimum cost unit now available. The new model uses the same pumping unit as other DeVilbiss airless equipment and the same spray gun. It includes a refillable, 10-gallon tank with clamp-lock lid, pressure control regulator and gauge, air motor driven agitator, filter and positive air shut-off valve. Write: *C. R. Pipes, Nat. Ser. Mgr., The DeVilbiss Co., 300 Phillips Ave., Toledo 1, Ohio, or 'phone GR 4-5411.*

Engine Heater

Equipped with automatic thermostats

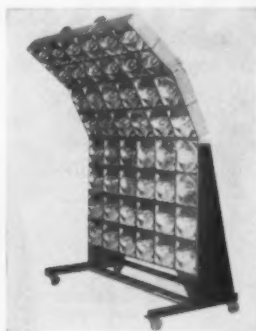


Five Star Manufacturing Company: A series of external type engine heaters has been introduced. The new models are avail-

able in wattages of 750, 1000, 1500, 2000, and 2500. All are equipped with automatic thermostats to give maximum efficiency and controlled heat. Models can be adopted to any liquid cooled engine, dependent on the wattage desired. Write: *D. E. Walhood, Sales Mgr., Five Star Mfg. Co., Box 149, Clarksdale, Miss., or 'phone Main 4-9041.*

Portable Infrared Unit

Can be used for baking, heating, and drying applications



Fostoria Corporation: A portable infrared unit is introduced. It is suitable for a wide variety of baking, heating, and drying applications. Known as Model 96-848, the unit features casters on the base. It accommodates lamps up to 500 watts per socket with a total possible connected load of 24 KW. The portable unit employs company's patented wide-angle gold-plated reflectors which provide maximum heating efficiency. In addition, zoned switching provides flexibility of heat output. The top four sections of the unit are adjustable to allow radiation to conform with product contours. Write: *D. E. Kralovec, Manager, Infrared Sales, Fostoria Corp., N. Main Street, Fostoria, Ohio, or 'phone HE 5-7721.*

Solderless Terminal Assortments

May be placed on counter or hung on wall

Vaco Products Co.: Solderless

Terminal Assortments in a new display in the form of a "cash drawer" is announced. Made of heavy steel, it is 13 1/4" wide, 9 1/4" deep and 2" high. The front is



equipped with a carrying handle and a latch. There are 20 compartments for holding 20 different types of solderless terminals and a larger compartment for holding the Vaco bolt-cutting and crimping tool. The lid is piano-hinged and punched for hanging up as a wall display. Write: *Vaco Products Co., 317 E. Ontario St., Chicago 11, Ill.*

Car Lift

Auto lift has air-oil dead-lock safety

J. C. Cochran Company: Developed recently is what is reported to be a fool-proof automatic deadlock lift. This new lift uses no pressurized exterior air or oil piping or tanks upon which the weight



of the elevated vehicle is dependent, states the company. According to the report, the new lift's operating air pressure is applied only at the top end of the piston and the entire oil supply is contained within the casing-piston assembly. Automatic release-

Continued on page 70



SELLING SLANTS

MONEY-MAKING FACTS

★★ Ice-O-mat
ice crusher



TAKE YOUR PICK

1—2—3—4 and 5 Star Awards

This is just a sampling of the 30 valuable prizes you can choose from in the AC-Guide Parade of Prizes. Read how you can get one or more of these exciting prizes—and make extra profits besides!



★ Airguide
auto compass

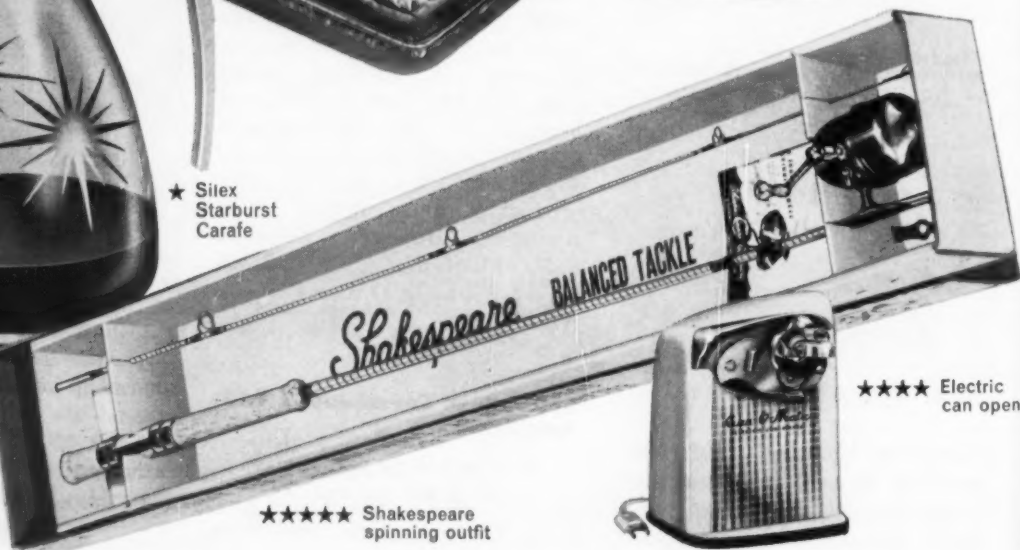


★★★ Sportline
sleeping bag

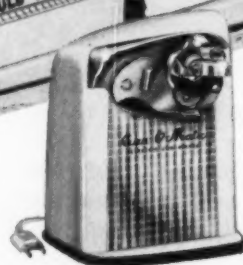
★ Coleman
insulated
jug



★ Silex
Starburst
Carafe



★★★★★ Shakespeare
spinning outfit



★★★★ Electric
can opener

OF THE MONTH !
FOR DEALERS

AC

Hurry—Hurry—Hurry! It's Pick-Your-Prize Time in the

AC *Guide*

Parade of Prizes

Yours with the GLM-79 Merchandiser Package

What an assortment of prizes! If you're an outdoor man, you might like a deluxe sleeping bag . . . a Coleman lantern or camp stove . . . a tackle box . . . or a Shakespeare spinning outfit. Or why not thrill the lady in your life with an electric blanket . . . an electric can opener . . . or a deluxe hair dryer. There are gifts for the whole family, too—30 in all. And now you can get one or more of these wonderful gifts just by stocking and selling "Guide" Lamps—the sealed-beam lamps that are used on more new cars than any other brand.

How to get your "Parade of Prizes" Awards

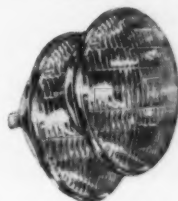
Each GLM-79 Merchandiser Package you buy contains a 1-star Award Certificate—redeemable immediately for one of several 1-star gifts. The more packages you order—the more 1-star certificates you can accumulate for more expensive 2—3—4 or 5 Star Awards, as shown here. To order your prize or prizes, just fill out the certificate and send it to AC Parade of Prizes Headquarters. You pay only \$28.35 for each GLM-79 package containing 16 fast-moving AC Guide sealed-beam lamps. The profit from three 6000 series lamps is your only investment in the valuable 1-star award certificate. You get full profit on the 13 remaining lamp units.

Get on the beam for more sales, prizes and profits

Give your lamp sales a real boost by offering your GLM-79 prize certificate as an employees' sales award.

Used as an incentive, such prizes can quickly build lamp sales and profits.

GLM-79 CONTAINS



16 FAST-MOVING AC GUIDE LAMPS

Each package contains a balanced inventory for both 2- and 4-headlamp cars. The assortment consists of the following types: 5-6006; 5-6012; 2-4001; 4-4002.

VALUABLE 1-STAR AWARD CERTIFICATE

A 1-star Award Certificate comes in each GLM-79 Package. It can be redeemed immediately for a 1-star award by completing the reverse side and mailing to AC Parade of Prizes headquarters. Award Certificates may also be accumulated for larger 2- to 5-star awards.



AWARDS FOLDER

Fully illustrated, this folder shows all of the prizes available and how many star certificates are required for each prize. There are 30 valuable prizes in all.



ORDER GLM-79 PACKAGES FROM YOUR **AC SUPPLIER TODAY**

1961 Tune Up—Alignment Specifications

MAKE AND MODEL	No. of cylinders Bore and (In.)	Maximum Brake H.P.	ENGINE		TUNE-UP DATA										FRONT END ALIGNMENT			
			Spark Plug Make and Size	(mm.)	VALVES				IGNITION						Steering Axis Inclination (Deg.)	Caster (Deg.)	Camber (Deg.)	Toe-in (In.)
					Seat Angle		Clearance Tappet Operating		Breaker Point Gap (In.)	Cam Angle (Deg.)	Spark Plug Gap (In.)	Timing Spark Occurs T.C.						
					Inlet (Deg.)	Exhaust (Deg.)	Inlet (In.)	Exhaust (In.)										
AMERICAN MOTORS CORP.																		
Rambler... American (Deluxe & Super)	6-3 1/2 x 4 1/4	90	CA-14	45	45	.016C	.018C	.020	39	.035	3B	8	0 to 1 1/2 P	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... American (Custom)	6-3 1/2 x 4 1/4	125	CA-14	45	45	.012H	.016H	.016	32	.035	8B	8	0 to 1 1/2 P	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Classic 6	6-3 1/2 x 4 1/4	127	CA-14	45	45	.012H	.016H	.016	32	.035	8B	6 11'	0 to 1 1/2 P	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Classic 8	8-3 1/2 x 3 1/2	200	CA-14	30	45	.012H	.014H	.017	30	.035	TC	6 11'	0 to 1 1/2 P	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Ambassador	8-4 x 3 1/4	250	CA-14	30	45	Hyd	Hyd	.017	30	.035	TC	6 11'	0 to 1 1/2 P	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2		
CHECKER MOTORS CORP.																		
Checker... Superba, Marathon	6-3 1/2 x 4 1/4	80	Ch-18	30	44	.014H	.014H	.020	39	.029	4B	7	2P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Superba, Marathon (Engine Option)	6-3 1/2 x 4 1/4	122	Ch-14	30	44	.017H	.023H	.020	39	.033	3 1/2 B	7	2P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2		
CHRYSLER CORP.																		
Chrysler... Newport	8-4 1/2 x 3 1/2	285	AL-14	45	45	Hyd	Hyd	.017	30	.035	10B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Windsor	8-4 1/2 x 3 1/2	305	AL-14	45	45	Hyd	Hyd	.017	30	.035	10B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... New Yorker	8-4 1/2 x 3 1/2	356	AL-14	45	45	Hyd	Hyd	.017	30	.035	10B	6 1/2	1/2 P to 1 1/2 P	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... 300-G	8-4 1/2 x 3 1/2	375	AL-14	45	45	Hyd	Hyd	.017	30	.035	5B	6 1/2	1/2 P to 1 1/2 P	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
DeSoto... Polara	8-4 1/2 x 3 1/2	265	AL-14	45	45	Hyd	Hyd	.017	30	.035	10B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
Dodge... Polara	8-4 1/2 x 3 1/2	265	AL-14	45	45	Hyd	Hyd	.017	30	.035	10B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
Dodge... Polara (Engine Option)	8-4 1/2 x 3 1/2	325	AL-14	45	45	Hyd	Hyd	.017	30	.035	7 1/2 B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
Dodge Dart... Seneca, Pioneer, Phoenix	6-3 1/2 x 4 1/4	145	AL-14	45	46	.010H	.010H	.020	43	.035	21-B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Seneca, Pioneer, Phoenix	8-3 1/2 x 3 1/2	230	AL-14	45	45	.010H	.018H	.017	30	.035	5B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Seneca, Pioneer, Phoenix (Engine Option)	8-4 1/2 x 3 1/2	305	AL-14	45	45	Hyd	Hyd	.017	30	.035	10B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Seneca, Pioneer, Phoenix (Engine Option)	8-4 1/2 x 3 1/2	330	AL-14	45	45	Hyd	Hyd	.017	30	.035	7 1/2 B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
Dodge Lancer... 170, 770	6-3 1/2 x 4 1/4	145	AL-14	46	46	.010H	.020H	.020	43	.035	21-B	7 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Custom, Crown, Le Baron	8-4 1/2 x 3 1/2	350	AL-14	45	45	Hyd	Hyd	.017	30	.035	10B	6 1/2	1/2 P to 1 1/2 P	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
Plymouth... Savoy, Belvedere, Fury	6-3 1/2 x 4 1/4	145	AL-14	46	46	.010H	.020H	.020	43	.035	21-B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Savoy, Belvedere, Fury	8-3 1/2 x 3 1/2	230	AL-14	45	45	.010H	.018H	.017	30	.035	5B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Savoy, Belvedere, Fury (Engine Option)	8-4 1/2 x 3 1/2	305	AL-14	45	45	Hyd	Hyd	.017	30	.035	10B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Savoy, Belvedere, Fury (Engine Option)	8-4 1/2 x 3 1/2	330	AL-14	45	45	Hyd	Hyd	.017	30	.035	7 1/2 B	6 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
Valiant... V-100, V-200	6-3 1/2 x 3 1/2	101	AL-14	46	46	.010H	.020H	.020	43	.035	21-B	7 1/2	0 to 1N	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
FORD MOTOR CO.																		
Comet... (Engine Option)	6-3 1/2 x 2 1/2	85	Ch-18	45	45	.018H	.018H	.025	37	.034	6B	7	1P to 1 1/2 P	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
Falcon... (Engine Option)	6-3 1/2 x 2 1/2	101	Ch-18	45	45	.018H	.018H	.025	37	.034	6B	7	1P to 1 1/2 P	1/2 P to 1/2 P	1/2 to 1/2	1/2 to 1/2		
Ford... Fairlane, Fairlane 500, Galaxie	6-3 1/2 x 3 1/2	85	Ch-18	45	45	.018H	.018H	.025	37	.034	6B	7	1 1/2 P to 2P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Fairlane, Fairlane 500, Galaxie	6-3 1/2 x 3 1/2	135	Ch-18	45	45	.018H	.018H	.025	37	.034	6B	6 1/2	1 1/2 P to 2P	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Fairlane, Fairlane 500, Galaxie	8-3 1/2 x 3 1/2	175	Ch-18	45	45	.018H	.018H	.015	27	.034	3B	6 1/2	1/2 N to 1 1/2 P	1/2 P to 1P	1/2 to 1/2	1/2 to 1/2		
..... Fairlane, Fairlane 500, Galaxie (Engine Option)	8-4 x 3 1/2	220	Ch-18	45	45	Hyd	Hyd	.015	27	.034	3B	6 1/2	1/2 N to 1 1/2 P	1/2 P to 1P	1/2 to 1/2	1/2 to 1/2		
Lincoln Continental... Meteor 600, 800	8-4 1/2 x 3 1/2	300	Ch-18	45	45	Hyd	Hyd	.015	27	.034	3B	6 1/2	1/2 N to 1 1/2 P	1/2 P to 1P	1/2 to 1/2	1/2 to 1/2		
Mercury... Meteor 600, 800; Monterey	8-4 1/2 x 3 1/2	300	Ch-18	45	45	Hyd	Hyd	.015	27	.034	6B	7	0 to 1 1/2 N	0 to 1 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Meteor 600, 800; Monterey	6-3 1/2 x 3 1/2	135	Ch-18	45	45	.019H	.019H	.026	37	.034	4B	6 1/2	1/2 N to 1 1/2 P	1/2 P to 1P	1/2 to 1/2	1/2 to 1/2		
..... Meteor 600, 800; Monterey (Engine Option)	8-3 1/2 x 3 1/2	175	Ch-18	45	45	.018H	.018H	.015	27	.034	3B	6 1/2	1/2 N to 1 1/2 P	1/2 P to 1P	1/2 to 1/2	1/2 to 1/2		
Thunderbird... (Engine Option)	8-4 x 3 1/2	220	Ch-18	45	45	Hyd	Hyd	.015	27	.034	3B	6 1/2	1/2 N to 1 1/2 P	1/2 P to 1P	1/2 to 1/2	1/2 to 1/2		
..... Meteor 800, Monterey (Engine Option)	8-4 1/2 x 3 1/2	300	Ch-18	45	45	Hyd	Hyd	.015	27	.034	3B	6 1/2	1/2 N to 1 1/2 P	1/2 P to 1P	1/2 to 1/2	1/2 to 1/2		
Thunderbird... (Engine Option)	8-4 1/2 x 3 1/2	300	Ch-18	45	45	Hyd	Hyd	.015	27	.034	6B	6 1/2	1/2 N to 1 1/2 N	0 to 1P	1/2 to 1/2	1/2 to 1/2		
GENERAL MOTORS CORP.																		
Buick... Special	8-3 1/2 x 2 1/2	155	AC-14	45	45	Hyd	Hyd	.016	30	.033	7 1/2 B	7 1/2	1/2 N to 1 1/2 N	1/2 N to 1/2 P	1/2 to 1/2	1/2 to 1/2		
..... Le Sabre	8-4 1/2 x 3 1/2	250	AC-14	45	45	Hyd	Hyd	.016	30	.033	12B	9 52'	1/2 N to 1 1/2 N	0 to 1P	1/2 to 1/2	1/2 to 1/2		
..... Invicta, Electra, Electra 225	8-4 1/2 x 3 1/2	325	AC-14	45	45	Hyd	Hyd	.016	30	.033	12B	9 52'	1/2 N to 1 1/2 N	0 to 1P	1/2 to 1/2	1/2 to 1/2		
Cadillac... 60, 62, 63, 75	8-4 x 3 1/2	325	AC-14	44	44	Hyd	Hyd	.016	30	.035	5B	6	1/2 N to 1 1/2 N	1/2 P to 1 1/2 P	1/2 to 1/2	1/2 to 1/2		
Chevrolet... Biscayne, Bel Air, Impala	6-3 1/2 x 3 1/2	135	AC-14	31	46	Hyd	Hyd	.019	32	.036	5B	7 11'	1/2 N to 1 1/2 P	0 to 1P	1/2 to 1/2	1/2 to 1/2		
..... Biscayne, Biscayne Fleetmaster	6-3 1/2 x 3 1/2	135	AC-14	31	46	.009H	.016H	.019	32	.036	5B	7 11'	1/2 N to 1 1/2 P	0 to 1P	1/2 to 1/2	1/2 to 1/2		
..... Biscayne, Biscayne Fleetmaster, Bel Air, Impala	8-3 1/2 x 3	170	AC-14	46	45	Hyd	Hyd	.019	30	.036	4B	7 11'	1/2 N to 1 1/2 P	0 to 1P	1/2 to 1/2	1/2 to 1/2		
Biscayne, Biscayne Fleetmaster, Bel Air, Impala (Engine Option)	8-4 1/2 x 3 1/2	250	AC-14	46	46	Hyd	Hyd	.019	30	.036	4B	7 11'	1/2 N to 1 1/2 P	0 to 1P	1/2 to 1/2	1/2 to 1/2		
Corvair... 500, 700, 900	6-3 1/2 x 3	80	AC-14	45	45	Hyd	Hyd	.019	33	.035	4B	7	3P to 3 1/2 P	0 to 1P	1/2 to 1/2	1/2 to 1/2		
Corvette... F-88	8-3 1/2 x 3	230	AC-14	46	40	Hyd	Hyd	.019	30	.036	4B	4	1 1/2 P to 2 1/2 P	1/2 N to 1 1/2 P	1/2 to 1/2	1/2 to 1/2		
Oldsmobile... F-88	8-3 1/2 x 2 1/2	155	AC-14	45	45	Hyd	Hyd	.016	30	.040	5B	7 1/2	1/2 N to 1 1/2 N	0 to 1P	1/2 to 1/2	1/2 to 1/2		
..... Super 88, 98	8-4 1/2 x 3 1/2	250	AC-14	45	45	Hyd	Hyd	.016	30	.030	5B	10	0 to 1N	1/2 N to 1/2 P	0 to 1/2	1/2 to 1/2		
Pontiac... Catalina, Ventura, Star Chief	8-4 1/2 x 3 1/2	325	AC-14	45	45	Hyd	Hyd	.016	30	.030	5B	10	0 to 1N	1/2 N to 1/2 P	0 to 1/2	1/2 to 1/2		
..... Bonneville	8-4 1/2 x 3 1/2	215	AC-14	30	45	Hyd	Hyd	.016	30	.036	6B	4 50'	1N to 2N	1/2 N to 1/2 P	0 to 1/2	1/2 to 1/2		
Tempest... (Engine Option)	4-4 1/2 x 3 1/2	110	AC-14	30	45	Hyd	Hyd	.016	75	.036	6B	4 50'	1N to 2N	1/2 N to 1/2 P	0 to 1/2	1/2 to 1/2		
..... (Engine Option)	6-3 1/2 x 2 1/2	155	AC-14	46	46	Hyd	Hyd	.016	30	.032	5B	6 50'	1/2 N to 1 1/2 N	1/2 P to 1 1/2 P	0 to 1/2	1/2 to 1/2		
STUDEBAKER-PACKARD CORP.																		
Studebaker... Lark-6	6-3 x 4	112	Ch-14	45	45	.024H	.024H	.020	39	.036	2B	6	1/2 N to 1 1/2 P	0 to 1P	1/2 to 1/2	1/2 to 1/2		
..... Lark-8	8-3 1/2 x 3 1/2	180	Ch-14	45	45	.024H	.024H	.016	30	.036	4B	6	1/2 N to 1 1/2 P	0 to 1P	1/2 to 1/2	1/2 to 1/2		
Hawk... (Engine Option)	8-3 1/2 x 3 1/2	210	Ch-14	45	45	.024H	.024H	.016	30	.036	4B	6	1N to 2 1/2 N	0 to 1P	1/2 to 1/2	1/2 to 1/2		

ABBREVIATIONS

1—Left side only; right side, 0 to 1/2 P.
 1/2—Left side only; right side, 1/2 P to 1 1/2 N.
 AC—A.C. Spark Plug Div.

AL—Autolite.
 B—Before top center.
 C—Cold.

C-A—Champion or Autolite.
 Ch—Champion.
 H—Hot.

Hyd—Hydraulic valve lifters.
 N—Negative.
 P—Positive.
 TC—Top center.

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QUALITY
IN ACTION**



"Years ago, any bearing would do the job..."

... but in today's modern, high compression engines you've got to use the best. That's why I rely on Monmouth. After 41 years in the business, I know that Monmouth's trouble-free performance means satisfied customers."

If you want performance that pays off, use Monmouth Bearings in all of your engine rebuilds. For instant service, call on your NAPA jobber. He carries the complete Monmouth line to meet all of your engine bearing requirements.

Low premium "customer insurance" is yours when you install ...

MONMOUTH Engine Bearings

CLEVITE SERVICE: Cleveland Graphite Bronze • Division of Clevite Corporation • Cleveland 3, Ohio

says R. E. Lucas, Owner
Broadus & Lucas
Richmond, Virginia



Big Service Profits Continued from page 43

made it possible to service any sized car, even the very smallest. In addition to lifting the small cars the lift proves quite satisfactory in lifting standard-make cars.

A satisfied customer is the best advertisement in any business. The word began to spread throughout Tulsa and northeastern Oklahoma about Kunke's ability and eagerness to service sports cars. Soon more and more of the little cars began lining up in the driveway.

Then began the second step in Kunke's plan to build small car business. An education program for Kunke and his attendants in servicing sports cars was initiated. Here Kunke was fortunate in having four full-time employees who are licensed aircraft mechanics. They are students at Spartan School of Aeronautics, taking advanced courses there while holding down full-time jobs.

Having employees who were skilled in mechanics made the education program easier. Ed himself was an aviation mechanic while he was in the service during the last war.

In order to do a quality job of lubrication it was necessary to observe the recommendations laid down by manufacturers. In the case of foreign-make cars it was necessary to write manufacturers to get worksheets on how to oil and grease the cars properly. Kunke received enthusiastic cooperation from the makers.

In connection with worksheets a big problem came up. Many European charts and worksheets specified European oils as standard.

The solution to a big problem coupled with Kunke's extraordinary attendants put Kunke in the small-car business in a big way.

The third and final step necessary to complete Kunke's plan remained a headache for some time. Owners of sports cars could go to their dealers or to special garages to get major work done on their cars but they kept asking Kunke for smaller parts and accessories—the type a station regularly handles for standard-make automobiles.

Kunke began contracting suppliers for sports car accessories. His list of accessories carried began to increase slowly. Over a few months'

period oil filters, light bulbs, fan belts and tires for sports cars found room in Kunke's station.

Kunke says he can now provide or acquire within a short time most any part a small car owner needs.

He has built up his stock of small car tires and he has continued to add to the special tools and equipment needed for servicing the little automobiles.

"We aren't equipped for and we don't attempt major overhauls. But we are qualified to do minor tune ups and perform any service that a standard-make car owner would expect in any service station," Kunke emphasized.

"Sports cars now account for about 10 percent of my volume," he said. "But I definitely want that 10 percent. You have no way of knowing what percent of volume done in servicing standard-type cars is due to being able to handle sports cars. I've found that most customers who own a sports car also own a standard-make and, if they like the service we give them on their small car, will also bring in their family car."



One of Kunke's customers is John Zink, who has several sports and racing cars and who has had cars entered in the Indianapolis races for the past seven years.

Kunke says his interest in cars began as a child. His father owned a garage and Kunke says he was raised in it. While he doesn't own a sports car at present he is contemplating buying one.

"I always have been interested in

sports cars and racing. I am a member of the Tulsa Sports Car Club which is an affiliate of the Sports Cars Club of America," Kunke said.

"But even if I do buy a sports car I won't be driving in competition with my customers," he said with a grin.

Operating for 14 Months

Kunke has now been operating the station for over 14 months. He says, "I'm making a healthy profit and sports cars have made the difference between profit and loss."

His success is obvious for sports cars and standard-make cars crowd his drive from 7 a.m. to 10 p.m. seven days a week. One car is usually on the lift at all times with one or two waiting.

Ed Kunke has built a successful business by capitalizing on a portion of trade that other operators have felt was too small and too much trouble to promote.

New Products

Continued from page 65

lock mechanism, located in the top-end of the piston, deadlocks both air and oil systems. This deadlocking action can only be released when the serviceman intentionally operates the up-and-down control valve which is located out-from-under the lift. Write: J. D. Cochran Mfg. Co., 205 East Grand Ave., South San Francisco, Calif., or 'phone DELaware 3-7761.

Paint Undercoater

Sprays on evenly and dries in 15 minutes

Krylon, Inc.: A new primer that can be used as a regular automotive paint undercoater or as a one-coat finish is now being marketed. Krylon Hot Rod Charcoal-Black Primer sprays on evenly and dries in 15 minutes to a hard smooth finish. It is lacquer resistant and can be top-coated with almost any paint finish, company states. Write: Elmore E. Kayser, V.P. Adv. & Prod., Krylon, Inc., Ford & Washington St., Norristown, Pa., or 'phone Broadway 9-1950.

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with a Holley
PEP® Carburetor
—Brand New,
Not a Rebuilt!

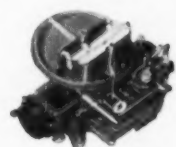
There's no question about the "tailoring" when you sell a Holley *PEP* Carburetor. Each *PEP* Carburetor is *brand new* and made-to-measure for the car and its engine, built with the same care and precision as the *original equipment* carburetor it replaces. Yet you sell these brand new Holley *PEP* Carburetors at *prices competitive with rebuilds* . . . and models are available for Ford-built cars and the most popular American Motors cars. See your Holley Distributor today about stocking Holley *PEP* Carburetors . . . and *PEP* Kits containing genuine Holley parts for carburetor minor overhauls.

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ORIGINAL EQUIPMENT MANUFACTURERS OF CARBURETION
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Carburetor Co.

RT-42



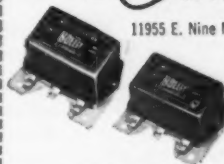
PEP Carburetors—
Engineered to Original
Equipment Specifications



PEP Carburetor Kits
—Original Equipment
Parts for Minor Overhaul



Genuine Holley
Ignition Equipment



Genuine Holley
Voltage Regulators



Genuine Holley Generator
and Starter Parts

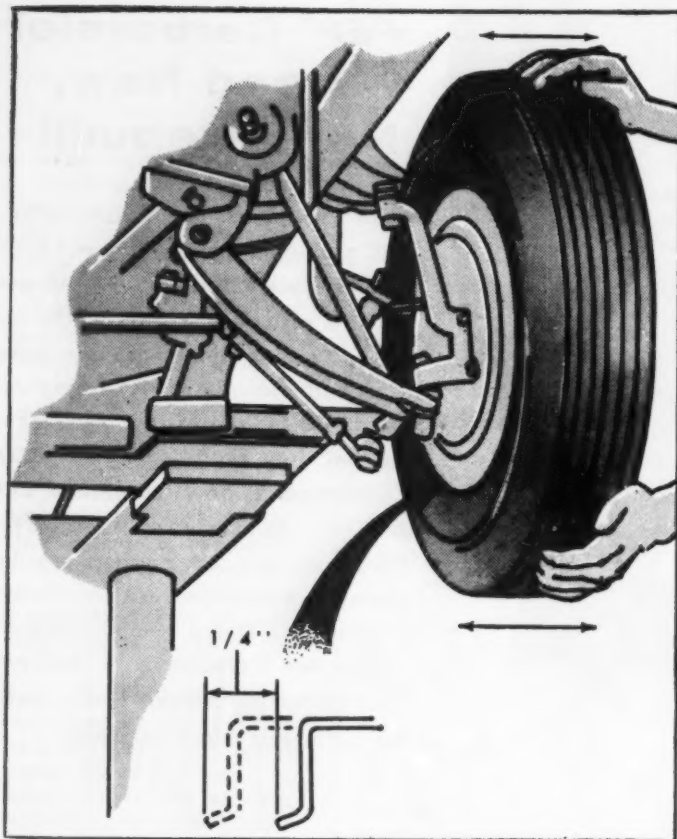
11955 E. Nine Mile Road, Warren, Michigan

SEE YOUR HOLLEY DISTRIBUTOR—CHECK THE YELLOW PAGES

MOTOR AGE CLINIC

for troubleshooting

BY JACK MONTGOMERY, TECHNICAL EDITOR



1955 Lincoln Has Front End Shimmy

I have a problem with a 1955 Lincoln Capri Convertible. It has a terrific front end shimmy when making a left hand turn. The car has been aligned and all four wheels balanced. New shock absorbers and the power steering pressure hose has been replaced. Wheel bearings were checked, tires rotated, steering

box checked and tightened. We have done everything possible to the front end, and still cannot get rid of the shimmy on a left turn. It has a very slight shimmy on a right turn. I would appreciate it if you could give me any idea that may help this situation.

Bob Lefkowitz
Bobs Service Station, Inc.
Hicksville, N.Y.

I WOULD suggest going over the steering and components once more. Double check for any looseness. Disconnect drag link and adjust sector on the high point. Check power steering, centering valve and spool for proper adjustment. Make sure the tie rods are adjusted equally when with steering in straight ahead position.

1958 Chevrolet Stalls When Coming to a Dead Stop

I have a customer with '58 Chevy 6 cylinder with automatic transmission. This car will stall every time you come to a dead stop, unless you have it idling at 650 or 700. It should be 425. This is alright as long as you don't throttle up and leave off all the way in drive. I have checked it with my oscilloscope and have increased the power and running of the car. I was satisfied with this and so was the customer. The car runs lean at 4,000 to 5,000. Since we are in Florida where everybody is gas conscious, I don't think this would help. By the way; what does Chevy use in place of the dash pot? I will appreciate any help or suggestions you can give me.

Carrol E. Woods
Woody's Service Center
Clearwater, Fla.

THIS car came equipped with a Rochester Carburetor model B or BC. In place of a dash pot a throttle return check is used and it can be adjusted. With en-

Continued on page 76

NEW LITERATURE DESCRIPTIONS

Automotive Parts Catalog

Contains more than 22,000 parts numbers



Thompson Products Replacement Division, Thompson-Ramo-Woolbridge, Inc.: Publication of a new automotive parts catalog set is announced. For easier handling, the "master" catalog is broken into four volumes. Each covers four major parts lines: engine parts, chassis parts, automatic transmission parts and engine bearings. Catalog contains more than 22,000 parts numbers. Write: *Thompson-Ramo-Woolbridge, Inc., Public Relations Office, 1845 E. 30th St., Cleveland, Ohio, or 'phone HE 1-6765.*

Tubeless Tire Repairing

Covers hot or cold vulcanizing methods

H. B. Egan Manufacturing Co.: Released is brochure with illustrated steps on the permanent repair of tubeless tires, using either the hot or cold vulcanizing methods. Write: *H. B. Egan Manufacturing Co., P.O. Box 1406, Muskogee, Oklahoma.*

Tubing Tool Catalog

Shows 75 different tools and kits

Imperial Brass Mfg. Co.: A line of tubing tools is presented in a new 32-page catalog. Catalog No. 3121 shows over 75 different tools and kits for all tubing work. It also contains data on such

miscellaneous items and service aids as test caps and plugs, air nozzles, blowers, machinery cleaners and drum faucets. Write: *D. B. Snazelle, Asst. Mgr. Marketing Services, The Imperial Brass Mfg. Co., 6300 West Howard Street, Chicago 48, Illinois.*

Filter Catalog

Gives data on oil, air, fuel filters
Wix Corporation: Announced is the release of a new master catalog. Printed in color, it consists of 116 pages of information divided into three major sections—Cross Reference by filter make



and model, Replacement Specifications by equipment make and model, Replacement Specifications by equipment manufacturer's part numbers. It gives data on cars, trucks, buses, farm and construction equipment, stationary engines, as well as filter equipped foreign car and trucks. Write: *Norman A. Hull-Ryde, Sales Promotion Manager, Wix Corp., 1301 Ozark Ave., Gastonia, N.C., or 'phone University 4-2681.*

Silicone Brochure

Tells about silicones in the automotive industries

Dow Corning Corporation: A new brochure describes how silicones in various physical forms are helping designers of autos,

trucks and other land vehicles solve some of their engineering problems. Applications for silicone products in production equipment and as aids to manufacturing and maintenance are also outlined. Write: *H. F. Beutler, Supr. Tech. Info. Sec., Dow Corning Corp., Midland, Michigan, or 'phone Temple 2-2371.*

Specialties Brochure

Helps build sales in the replacement market

Electric Autolite Co.: Increasing sales through the use of advertising specialties is the subject of a new brochure. It is available to dealers, service station and garage operators. Write: *Glenn Campbell, Dir. of Publicity, Spark Plug Division, The Electric Autolite Co., Toledo 1, Ohio, or 'phone Cherry 3-3131.*

Fact Folder

Offers information on servicing "Compact" tires

Big Four Industries, Inc.: The fourth in the series of "Fact Folders" is "Tire Servicing for Compact Cars." The folder on compact tire service consists of information and drawings on handling of tricky rims on the compacts, including the Falcon,



Valiant, and Corvair. The entire series of four folders comprises a complete "Home study course" in changing and servicing tubeless tires, particularly the 13 and 14-inch. Write: *Richard E. Calk, Customer Service Mgr., Big Four Industries, Inc., Box 444, Foster, Ohio, or 'phone NO 5-8341.*

At the heart of this reconditioned engine is the most complete warranty in the business!

Each part of every Ford Authorized Reconditioned Engine is warranted by the reconditioner for 90 DAYS or 4,000 MILES. The reason for this vote of confidence, of course, is quality!

Ford Authorized Reconditioners don't just *rebuild* an engine, they *remanufacture* it. To do this, they go far beyond what are considered the accepted standards for the industry. For example: in a typical Ford Authorized Reconditioned V-8 engine, over 100 NEW parts replace the old ones.

Timing chain, crankshaft bearings, pistons and piston rings are just a *few* of the important replacements made in *every* Ford Authorized Reconditioned engine.

The final results are greater than the sum of all the parts, as any regular user of Ford Authorized Reconditioned engines can tell you.

For the skill with which these engines are assembled, the tests and inspections which they must undergo, and the detailed specifications which the Ford factory has laid down combine to give you the best reconditioned engines in the business, for power replacement!

The Ford Authorized Reconditioner's engine and small parts warranty is your license to save time and money... for a more profitable shop operation.



Ford Authorized Reconditioned Engines and Parts

All new replacement parts used in reconditioning are Genuine Ford Parts

Manufacturer's Service Warranty FORD RECONDITIONED ENGINES



For a period of 90 days from date installed, or 4000 miles (whichever event first occurs), we warrant all engines against defects in material and factory workmanship if operating instructions are followed.

For 90 days or 4000 miles, whichever shall first occur, provided that TRUCK ENGINES OF 1/2 TON CAPACITY OR OVER.

On filing claims, any part of this engine assembly which under above conditions fails during workmanship during the period of warranty, may be exchanged for replacement parts are returned. Claims of alleged defects shall be subject to manufacturer's inspection.

The rebuilder be liable for oil, antifreeze, towing charges, or time lost while the unit is in the shop.

Not any engine which has been improperly installed or fails because of defects in accessories, air cleaner, fuel pump, brake booster, etc.) not furnished with the engine, or because of accident (cracked blocks, etc.) or operated under conditions causing stresses for which it was not originally designed (such as in a boat, stationary power, etc.).

When the certificate of installation (supplied with the engine) is detached, this warranty is void.

This warranty is in lieu of all warranties or guarantees expressed or implied.

PROTECTION. This warranty recognized by any Authority.

REBUILDER

Clearing House Continued from page 72

gine running at normal operating temperature adjust the idle speed screw to 500 rpm with transmission in neutral. Shut off engine and insert a .090 in. feeler gage between the choke lever cam and the fast idle lever. With a 3/8 in. wrench, turn the adjusting screw until it just contacts the throttle lever contact arm. Start the engine and recheck the idle speed.

'57 Ford Leaks Oil At Filter

My neighbor has a '57 Ford V8 which he bought new at the local Ford dealer. After a short while he noticed water in the oil at draining time. He contacted his dealer about it and was told it was simply condensation and that there was absolutely noth-

ing wrong with the car. Can he remedy this problem?

I believe the car now has around 8000 miles on it. He now has trouble holding the oil filter seal from giving away. This started after he would drain the oil and drive up to around 1000 miles after the oil change. Its down now to around 5000 miles after oil change that the seal gives out. He has had different stations change filters, also other mechanics but to no avail. I asked him if the oil is clean and he said "no, its creamy." Looking on at draining time I am of the opinion the oil is forced into the filter. But that's as far as it goes and the buildup of pressure causes the seal to give out.

I'm not too familiar with the oil circuit of this engine. Could a blockage of some sort cause this? The engine runs fine, no knocks, starts OK, and seems mechanically OK. This man is afraid to drive the car the way it is. There is no warning when the seal is going to go out. He claims no water is added to the radiator.

Garry Tittel

*Frontier Chevrolet Co.
Jetmore, Kansas*

Good Money REPAIRING RADIATORS!



A real opportunity awaits someone in your area to cash in on the growing volume of radiator servicing. Why not YOU? Consider these facts:

- The high pressure in today's auto cooling-system demands more frequent radiator servicing.
- 83% of all radiators over a year old are partly plugged — need cleaning. Many need repairing.
- The number of autos, trucks and tractors in your area increases every year.

PROFITS: \$6,000-\$8,000-\$10,000 additional a year reported by many Inland shops and departments.

EQUIPMENT: Inland, world's largest radiator equipment mfr., offers a complete, modern line. Everything to test, clean, repair and recore radiators.

TRAINING: You or your man admitted without cost to our factory school for complete training in radiator work. Continuing merchandising and selling aids.

PAYMENT PLAN: Equipment available on Inland's "Pays-For-Itself" payment plan... enables you to pay from profits. Mail coupon today.

INLAND MANUFACTURING COMPANY

Dept. MA-12, 1108 Jackson St., Omaha 2, Nebr.

Mail Coupon Now!



INLAND MFG. CO., Dept. MA-12, 1108 Jackson St., Omaha 2, Nebr.

Please send free 32-pg. book describing equipment, school, prices, payment plan, etc.

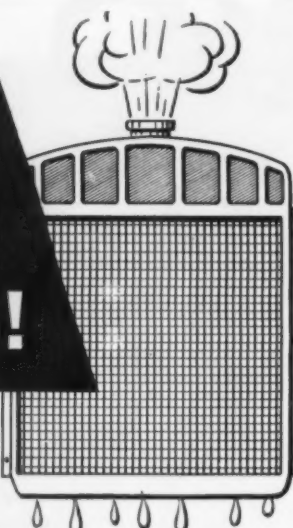
FIRM _____ (PLEASE PRINT)

ADDRESS _____

CITY _____ ZONE _____ STATE _____

BY _____ TITLE _____

If dealer, make of car sold _____
Are you now operating a radiator Dept. 7 ☐ Yes ☐ No



\$300
a week

\$400
first week

\$9,445
first year

\$10,000
a year

\$13,500
first year

TO correct the leak at the filter, I would suggest removing the filter element. Then remove the nut and filter plate. Behind this plate is another gasket which should be replaced. Blow out all the passages, install a new gasket. Install the plate which is stamped "Top." Then screw on filter and tighten according to specifications.

The condensation in the crankcase can best be controlled by obtaining one of the available positive crankcase ventilators that sell for about \$10.00. This should eliminate the water in the system.

Talk is going around that some people who have read so much about the possibility of harmful effects from smoking have made up their minds... They've decided to give up reading.

ORDER YOUR PACKARD ELECTRIC CABLE NEEDS NOW



Battery Terminal Connector

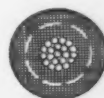


High- and Low-Tension Cable



Snap Fast Connectors

Packard Electric has a complete line of quality automotive cables. They are used on more cars than all other makes combined. From Connectors to High- and Low-Tension Cable, through Battery Cable and T.V.R.S. (Television-Radio Suppressor) Cable, Packard Electric Products have a well-earned reputation for reliability and are packaged for profit and convenience.



Engine Compartment Cable

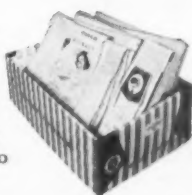


T.V.R.S. Cable

AND ENJOY VALUABLE SPECIAL BONUS!

SPECIAL DEAL—

A CASCO ELECTRIC BLANKET FOR ONLY \$11.95 A \$20 order for any combination of Packard products qualifies you. All you have to do is figure your cable needs for the season. Ask your U-M-S supplier to explain just how easy it is to get one of these Casco Electric Blankets, twin or double size.



Packard Electric

Warren, Ohio



"Live Wire" Division of General Motors

Wreck Estimating Continued from page 41

cars in his career. He says he never guesses the damages but figures every estimate meticulously.

"I guess I made estimates on about every car ever made," he says, "and that includes many, of course, that are no longer being manufactured, such as the Auburn, Maxwell, Rio, Hupmobile and others."

"A good estimator follows a specific pattern when figuring dam-

ages," he continues. "Suppose a car is hit in the front. The first thing I do is check the bumper and other allied parts at the point of impact. Then, I move on to the grille, front fenders, hood, hinges and emblems. Next, I look under the hood, check the motor, the inside of the car and, finally, the wheels and undercarriage. If the car was hit in the

rear, I follow much the same sequence again, beginning my inspection at the point of impact."

Cannon comments that many customers insist on brand new parts after their cars are in an accident, and this, he says, is not always necessary. A good body shop, with proper equipment and trained mechanics, can fix a dented fender, door or other car damage so that no one would ever know that it had been damaged previously.

Cannon says that he has never seriously under-estimated the cost for repairing a car.

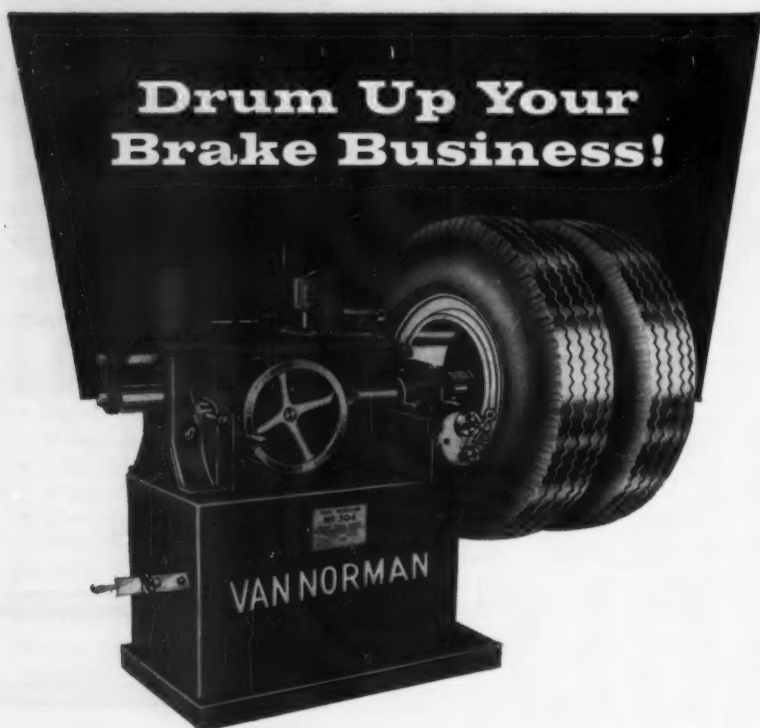
"If there is any doubt in my mind whether there is any hidden damage that won't show up until the car has been dismantled, I leave that item open on the estimate," points out Cannon. "Labor costs are frequently imponderables but, over a period of time, things even themselves out pretty well. I might figure too low on some cars—too high on others, but not very much either way. After all, when you estimate on an average of seventy cars a week (week in and week out) you get to know what you are doing."

Cannon says that the average car owner is often under the impression that once a car has been badly damaged, it cannot be put back into the condition it was before the accident.

"That is where they are wrong," says Cannon. "A good repair shop can fix it up so that it is equal to or in better condition than it was when it came off the assembly line new. We point out to the motorist that every new part is individually installed, and the work is handled on a personalized basis. Every effort is made to secure perfect fit which is not always the case when a car is built. Practically everyone who has bought a new car has discovered at one time or another that some screws are not pulled up tight, doors, hoods and trunks don't fit properly and motor adjustments are frequently necessary."

"By permitting motorists to make a tour of our shop to see our mechanics whom we term 'specialists' at work doing specific jobs and pointing out the different equipment that we have available to handle the necessary work," says Cannon, "helps to sell the customer on leaving their car in our shop for the necessary repairs."

Continued on page 82



with the Van Norman "Super Duty" Brake Drum Lathe—that takes them all.

The big Van Norman #304 can turn and vapo-jet wet grind a brake drum for giant 10-ton—plus jobs—**NO OUTBOARD SUPPORT REQUIRED . . .** and also can do the small compacts and passenger car drums—**FAST—EASY—**and accurately.

This means greater brake service market penetration.

The Van Norman #304 is easy to operate—*turns and wet grinds at the same time—also double tool bar (fast turn and finish cut simultaneously) is available.*

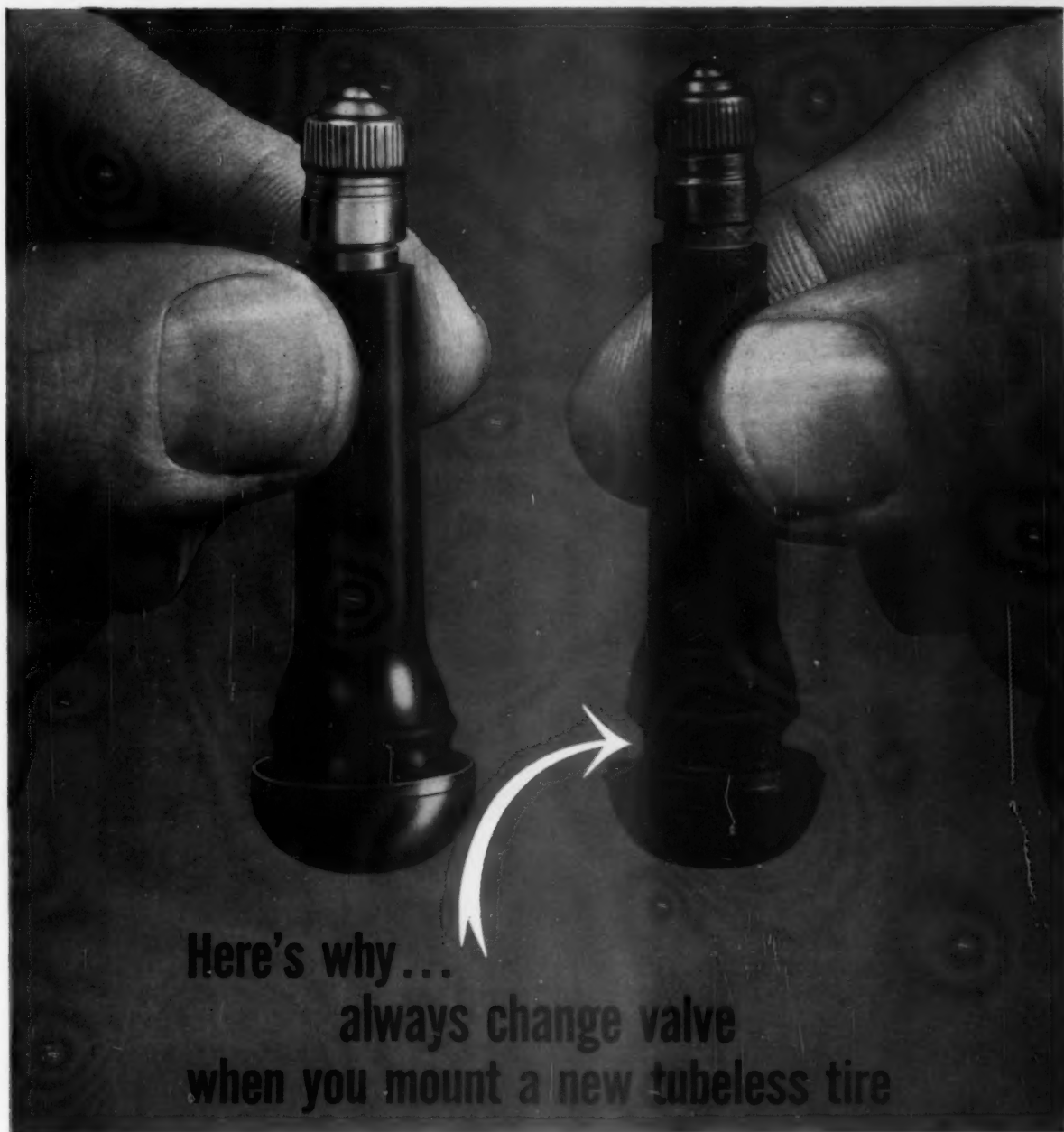
More Profit-Making Brake Service Jobs Per Day



VAN NORMAN

Springfield 7, Massachusetts
A DIVISION OF VAN NORMAN INDUSTRIES, INC.

2012



A casual examination of the old tire valve at the right might miss the serious damage at the seating surface. This snap-in valve was carefully removed after successfully performing throughout the life of one tire. Only a comparison with the new, fresh valve shows why it is not good business to leave the old valve in the rim

when mounting new tires you sell.

Schrader Tire Valves are the finest in the world, and they are engineered to outlast the finest tire. **BUT** rubber ages, loses elasticity upon which the ideal seal depends. It's far better business to *be sure a valve is as new as the tire it serves.*

Remember: Always install a new valve with every new tubeless tire you mount.



A. SCHRADER'S SON • BROOKLYN 38, N. Y.
Division of Scovill Manufacturing Company, Incorporated

FIRST NAME IN TIRE VALVES

FOR ORIGINAL EQUIPMENT AND REPLACEMENT

Made in America to American Standards of Quality

Letters to the Editor

Building Customer Confidence

Dear Editor:

Establishing a high repute for IGO is the prime regard of members of this association. This can be accomplished by "creating" in the mind of the public an image of technical know-how, dependability, fair treatment.

In these days of commercialism, the public has come to "think" in terms of brand names. The most popular brand name is automatically adopted as the symbol of that product or service. This is building "customer confidence."

At this time, we would like to extend our thanks to MOTOR AGE for its efforts in helping us build this "customer confidence" for the Independent Garage Owners of America.

Ralph James
Executive Director, IGOA
Tulsa, Okla.

Accidents Are Caused

Dear Sir:

Look at that car ahead of you. . . Does his turn light keep blinking when there's no place to turn? Are there fixed red reflectors that simulate turn indicators when your lights hit them?

Is the rear window covered by

travel gear? Is the driver so involved in conversation that his driving is affected?

Does the driver keep both hands at the top of the wheel with the result that only a half turn is possible in emergency?

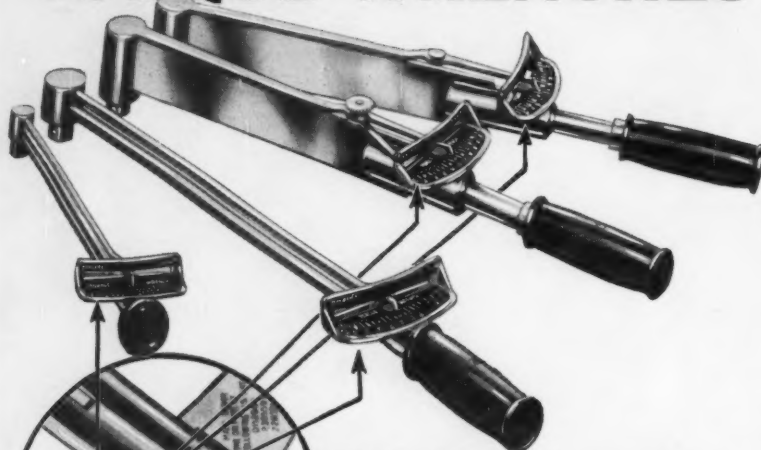
Does the driver warn you of his intended slowdown by lightly pumping his brake lights and, or giving a hand signal?

Are his shocks so worn that the car is dangerously "soft?"

Does he have an outside mirror—or a blind spot? . . . [No wonder the high accident rate around the country.]

F. P. Sherry
Duffy Bros. Garage
San Rafael, Calif.

TORQUE WRENCHES



This Mark* Guarantees:

1. Guaranteed accurate forever within 2% of maximum scale reading.
2. The only wrench that permits accurate use of adapter & extensions. Patented pivoted handle permits concentrated load position—the only way to obtain accuracy with adapters and extensions.
3. Rugged construction. Can be stored in a tool box with other tools.
4. Easy to use as any socket wrench.
5. Signalling models and direct reading styles to choose from.
6. A complete range to choose from to meet every service application.

*These are the same torque wrenches used and recommended by leading engine and equipment builders.



Valve and Clutch Spring Tester

Test new as well as used springs. Match sets of valve springs for top engine performance. Check clutch springs to prolong clutch life.

FREE

Torque Specification Book for over 130 makes and more than 1200 models of automobiles, (U.S. and foreign) trucks, tractors, outboards, motorcycles, diesel, aircraft, marine and small air cooled engines. Spark plug, wheel bearing, valve spring data and many helpful torque tips sent free upon request, write Dept. 615



PA STURTEVANT CO.
ADDISON QUALITY ILLINOIS



Imported Car Registrations* For Month of September

1960		1959	
Volkswagen	13,900	Renault	9,483
Renault	4,185	Volkswagen	8,705
Simca	2,010	English Ford	3,568
Opel	1,856	Fiat	3,545
English Ford	1,556	Opel	3,417
Triumph	1,552	Simca	3,041
Fiat	1,520	Hillman	2,466
Volvo	1,375	Vauxhall	2,200
Austin Healey	1,309	Triumph	2,153
Mercedes Benz	1,291	M. G.	1,665
All Others	9,807	All Others	13,950
Total	40,441	Total	54,194

Nine Months Total

1960		1959	
Volkswagen	115,467	Volkswagen	83,161
Renault	34,061	Renault	65,669
Opel	22,092	English Ford	33,272
English Ford	20,900	Opel	30,187
Fiat	17,538	Fiat	29,709
Triumph	14,523	Simca	28,765
Simca	13,880	Hillman	22,603
Austin Healey	13,743	Triumph	18,169
M. G.	10,849	Vauxhall	17,870
Mercedes Benz	10,557	Volvo	14,269
All Others	103,278	All Others	115,408
Total	397,268	Total	459,092

* Compiled from official state records. Data property of R. L. Polk & Co. May not be copied, sold or reprinted without Polk permission.



New cars have a way of stealing the show . . . they're on everybody's mind, in everybody's conversation. And once again, "There's Nothing Like a New Car" is the theme of a wide, wonderful advertising campaign which is steering a stream of prospects to General Motors dealers. These big, colorful advertisements are designed to whet the appetite for '61 GM cars, and to help guide a bigger share of our nation's disposable income into *your* showroom. The ads sing a song of fun, excitement and adventure . . . remembering to stress the practical values of performance, safety, reliability and big selection that only GM can provide. *It's great to be a GM dealer! . . .*

GENERAL MOTORS



Wreck Estimating Continued from page 78

Through complete shop departmentalization, better prices can be given to motorists and better profits made on work passing through the shop.

Al's Auto Body Service has five major departments. This includes a complete front end and wheel alignment department, sheet metal shop, paint shop, radiator and glass departments. Mechanics are assigned to specific jobs in the individual departments and concentrate on the work assigned to them.

"The longer a man remains on a specific job, the better he becomes and the faster he can turn it out," explains Cannon. "We have, for example, two specialists who do all our plastic work. We have another who only works on foreign cars. We also make sure to point out these features to our customers in an effort to make them realize that their work is being done in a specialized auto body repair shop."

Frank Cannon, frequently referred to as a "Wreckspert," has

found that his sharp estimating is the greatest single factor in his shop which enjoys a heavy repeat work volume.

1961 Events Calendar

Jan. 9-13—Society of Automotive Engineers international exposition, Cobo Hall, Detroit.

Jan. 28-Feb. 1—National Automobile Dealers Association annual convention, Civic Center, San Francisco.

Jan. 30-Feb. 2—Automotive Accessories Manufacturers of America exposition, Coliseum, New York City.

Feb. 6-8—Canadian Automotive Wholesalers & Manufacturers Association convention, Palliser Hotel, Calgary, Alta., Canada.

Feb. 13-14, 1961—Automotive Booster Clubs, International annual meeting, Statler-Hilton Hotel, Los Angeles, Calif.

Feb. 14, 1961—General Membership Meeting, Automotive Affiliated Representatives, Biltmore Hotel, Los Angeles, Calif.

Feb. 14-15, 1961—Automotive Service Industry Association national convention, Biltmore Hotel, Los Angeles, Calif.

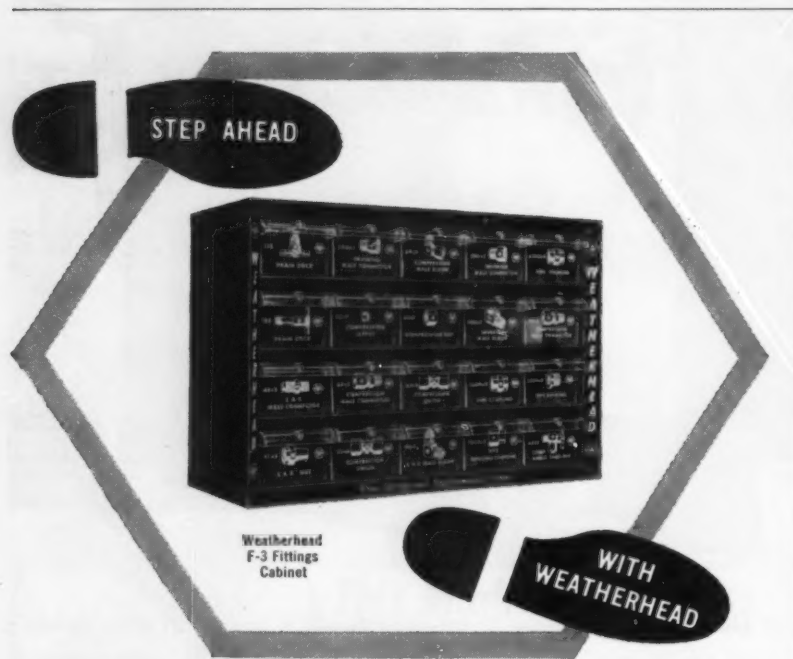
Feb. 16-19, 1961—Pacific Automotive Show presents ASI Show, Sports Arena, Los Angeles Memorial Coliseum, Los Angeles, Calif.

Feb. 18-26—Chicago Auto Show, Chicago Exposition Center, Chicago.

Feb. 22-26—11th Annual National Autorama, Connecticut State Armory, Hartford, Conn.

March 13-14—Louisiana Automobile Dealers Association, Roosevelt Hotel, New Orleans.

May 11-13—Pennsylvania Automotive Association, Hilton Hotel, Pittsburgh, Pa.



FREE! Fittings cabinet

when you buy \$25 worth of Weatherhead brass fittings

During Weatherhead's famous Cabinet Carnival you get this twenty-drawer stock cabinet free with every twenty-five dollar order—whether you take the standard assortment that fits most needs, or make up your own selection. Your Weatherhead jobber salesman will be

glad to help you choose. And you'll get more fittings for your money than ever before, as a result of our recent revolutionary price reduction announcement. There's no reduction in your profit margin, though—so get in on this Cabinet Carnival deal while jobber's stocks last.



WEATHERHEAD

the original equipment line

THE WEATHERHEAD COMPANY • Ft. Wayne Division
Dept. 608 • 128 West Washington Blvd. • Ft. Wayne, Indiana

Garage owner looking at his wife's bill from the dress shop: "When I married you I thought you were an angel."

Wife: "I'll say you did. You thought I could exist without clothes or hats!"

OLDSMOBILE OPENS THE DOOR TO FLEET SALES IN '61!

*Another reason why
it's better than ever
to be with
Olds!*

F-85 

**HOT NEW NUMBER
IN THE LOW-PRICE FIELD!**



F-85 DE LUXE 4-DOOR SEDAN

Now Oldsmobile dealers can compete — car for car, feature for feature, dollar for dollar — with cars in the low-price field for profitable volume fleet sales! The all-new F-85 is every quality inch an OLDSMOBILE! Built for those who want *something better* in a smaller car, this new Olds has the performance and *prestige* that salesmen like! It delivers the smooth performance that only a full eight-cylinder engine can give . . . meets fleet requirements for comfort, handling ease, solid reliability . . . and outstanding fuel economy!

**FULL LINE OF
FULL-SIZE OLDSMOBILES
FOR COMFORT...PRESTIGE
...HIGH RESALE VALUE!**

This year, Oldsmobile dealers are "getting in the door" to new fleet accounts with the F-85! And they are *selling their bigger, medium-priced models in greater volume than ever* to these new customers! In Oldsmobile's full-size '61 models, fleet buyers have found the answer to executive requests for cars that are comfortable, roomy, economical, have a high resale value and upgrade the driver! When you sell Oldsmobile, you cover the fleet field!



DISTINCTIVE NINETY-EIGHT TOWN SEDAN

OLDSMOBILE DIVISION, GENERAL MOTORS CORPORATION, LANSING, MICHIGAN

At Champion-sponsored 42 companies "compare notes"

*When competing companies exchange information—it's news!
That news was made at the Champion Spark Plug
Company's "Ignition Performance Conference" this fall. Here's
what happened when more than 100 experts from firms in the
automotive, oil, farm and marine fields got together . . .*



For 3 days in October, engineers and service experts held open-forum discussions in this Toledo hotel ballroom. Purpose of the Ignition Performance Conference was a better understanding of the problems which concern everyone connected with internal combustion engines.



Sessions were taped and transcribed, so that information stemming from the conference would be available to all those who participated.



Some 75 major questions, submitted in advance by participating companies, touched on every area affecting spark plugs and ignition. Answers flowed freely, and competitors exchanged information in order to help the whole industry.

Ignition Conference...

to help you and your customers



High interest kept discussions going between formal sessions. Here George M. Galster, manager of Champion's technical services group, talks over a point with A. E. Kraus (l.) of Champion, and R. W. Young (rt.) of Continental Oil Co.



R. A. Stranahan, Jr., president of the Champion Spark Plug Company, thanks the conference chairmen. Left to right, they are E. M. Ritts, Tidewater Oil Co.; R. A. Stranahan; T. G. Tousey, Socony-Mobil Oil Co.; V. E. Yust, Shell Oil Co.; D. H. T. Millard, Imperial Oil Ltd. Champion plans to continue the conferences as long as they prove to be of value.



R. L. Miller (l.) and H. H. Cook of Ford Motor Company of Canada, Ltd., inspect a giant working model of Champion's Plug-Scope, one of many technical displays at the Champion-sponsored Ignition Conference.

CHAMPION

COMPANIES REPRESENTED AT 2nd ANNUAL IGNITION PERFORMANCE CONFERENCE

American Motors Corp.	Kendall Refining Co.
American Oil Co.	Kiekhäfer Corp.
Ashland Oil & Refining Co.	Lubrizol Corp.
BP-Canada	Mack Truck
BP North America Ltd.	McCulloch Corp.
California Research Corp.	M-F-A Oil Co.
Canadian Oil Companies	Ohio Oil Co.
Canadian Petrofina Ltd.	Outboard Marine Corp.
Chrysler Corp.	Phillips Petroleum Co.
Cities Service R & D	Pure Oil Co.
Clinton Engines	Shell Oil Co.
Continental Oil Co.	Shell Oil Co. of Canada
E. I. DuPont	Sinclair Refining Co.
DX Sunray Oil Co.	Sinclair Research Labs.
Ethyl Corp.	Socony-Mobil Oil
Ford Motor	Standard Oil of Indiana
Ford Motor Co. of Canada, Ltd.	Standard Oil of Ohio
Gulf Research & Development Corp.	Studebaker-Packard
Imperial Oil Ltd.	Sun Oil Co.
International Harvester	Supertest Petroleum
	Texaco, Inc.
	Tidewater Oil Co.

CHAMPION SPARK PLUG COMPANY • TOLEDO 1, OHIO

**THERE'S NO BETTER
BRAKE FLUID
FOR ANY CAR
THAN THE ONE
THAT GOES INTO
ALL NEW GM CARS!**



That's why it pays to stock Delco Super 11 Heavy Duty brake fluid, improved with HTD.

You have a ready-made market because—in 1961, as for the past twelve years—Delco Super 11 is original equipment on all new General Motors cars. And because it is specially designed to give the extra braking protection needed with today's high speeds and heavy traffic conditions, your other customers—both passenger and commercial—will want it, too. There's no better brake fluid replacement.

Delco Super 11 Heavy Duty brake fluid is readily available everywhere through the United Motors System and General Motors car and truck dealers.

DELCO SUPER 11 EXTRA HEAVY DUTY • is compatible with all rubber and metal parts! is chemically inert and physically stable! • **GIVES MORE SAFE STOPS FOR CUSTOMERS, MORE SALES FOR YOU!**

DELCO MORaine

Division of General Motors, Dayton, Ohio



Chilton's MOTOR AGE • December 1960

Good Shopkeeping Questionnaire

Attractiveness

- a. Outside inviting?
- b. Exterior Displays?
- c. Neon Lighting?

Cleanliness

- a. Neatness of work area?
- b. Shop interior creates good impression?

Accessibility

- a. Good entry and exit?
- b. Traffic flow unobstructed?
- c. Street entrance has wide apron?

Reception

- a. Friendly greeting to customers?
- b. Are personnel and mechanics courteous?
- c. Parking area for customers?

Customer Reception Room

- a. Attractive room for customers?
- b. Restrooms nearby?
- c. Location of room good?

Scheduling

- a. Does it have control tower?
- b. Are neat and accurate records kept?

Work Flow

- a. Controlled flow of labor?
- b. Adequate work space?
- c. Departments integrated?

Displays

- a. Replacement parts displayed?
- b. Accessories in sight and in easy reach?
- c. Top selling items displayed?
- d. Displays uncluttered?
- e. Seasonal items played up?

Lighting

- a. Good lighting?
- b. What kind of lighting?

Washrooms

- a. Clean washrooms for public and help?
- b. Mechanics' washroom
 1. Circular or semi-circular wash fountain?
 2. Liberal supply of soaps and detergents?
 3. Towel dispenser and waste receptacles?
 4. Adequate locker space?
 5. Floor slopes toward drain facilities?

Ventilation

- a. Windows properly placed?
- b. Air conditioned?
- c. Exhaust outlets in shop?

Cooling Systems . . .

Continued from page 39

with the "overhead valve engine" as high as 10 to 1, in comparison to compression ratios ten years ago of 6 to 1. With the increase in compression, or pressure in the combustion chamber, combustion gas leakage into the cooling system becomes more of a problem. The use of tension indicating wrenches for cylinder head bolts is now common-place because of this problem. Did you own a "torque wrench" 10 years ago?

Special attention should always be given to the cylinder head joint regardless of the type of head or gasket material used. On installation of new head gaskets, tension indicating wrenches should be used following the engine manufacturer's instructions on cylinder head bolt tension and order of tightening. After installation, the head joint should be checked to make sure that there is no leakage into the cooling system.

As additional miles are added to the engine, the joint or gasket should be periodically checked to be sure that it is always leak-tight. This is necessary because expansion

Continued on page 92

The best insurance against automobile accidents is a Sunday afternoon nap.



Tools & Equipment .

Continued from page 37

Generator-Regulator Tester
Wheel Balancer
Spark Plug Cleaner & Tester
Adequate Supplies of Service
Parts and Chemicals

SAFETY ITEMS—

Brake Shoe Reliner
Brake Shoe Grinder
Brake Drum Lathe
Pressure Bleed Tank
Wheel Pullers
One End Lift
Welding and Cutting Tools
Wheel Aligner
Parts Washers
Portable Roller Jacks

HEAVY REPAIR—

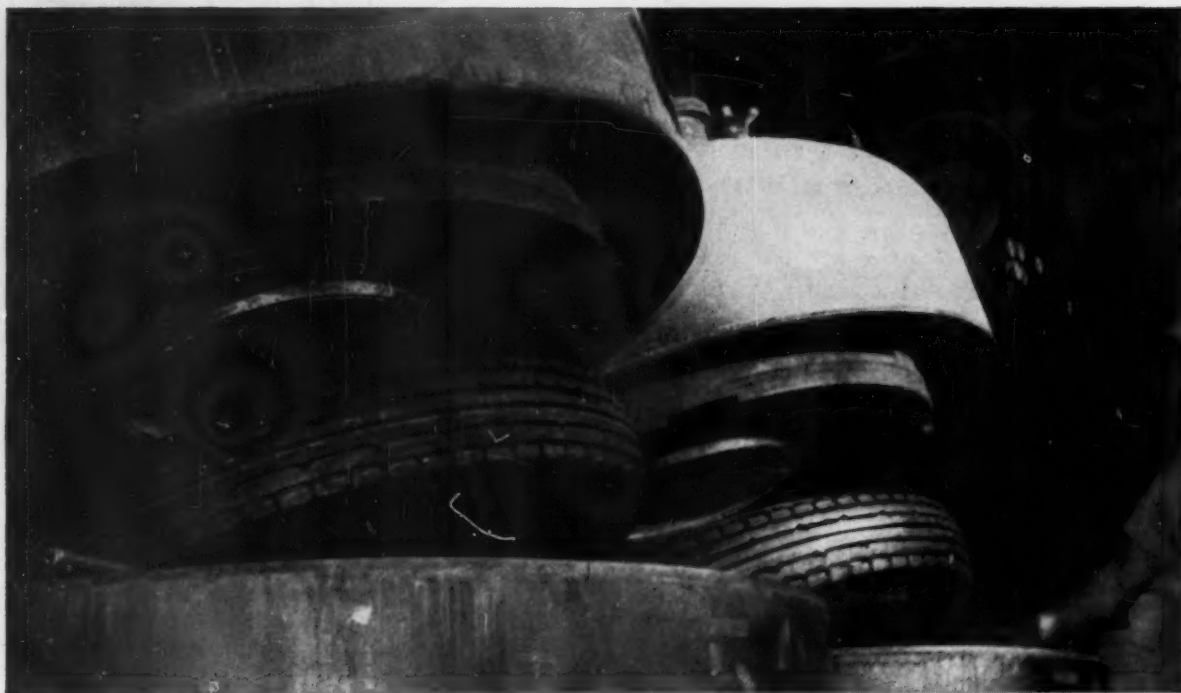
Engine Stand
Transmission Jack
Valve Refacer
Valve Seat Grinder
Bench Grinder
Cylinder Hone
Electric Drills
Impact Wrenches
Hydraulic Press
Gear Pullers
Micrometers
Torque Wrenches

BODY SHOP—

Wrecking Truck
Electric Welding Equipment
Gas Welding and Cutting
Tools
Frame Straightening
Equipment
Glass Replacement Tools
Power Tools
Paint Spray Guns
Spray Booth
Undercoating Equipment
Paint



THE U. S. TREASURY SALUTES THE RUBBER INDUSTRY



and its people who buy Savings Bonds and strengthen America's Peace Power

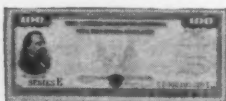
Americans who work in the rubber industry are proud of the rapid strides being made in their field, both in volume and in variety. Automotive rubber products and molded and mechanical rubber goods show constant gains in quality and quantity. Further, the rubber industry has done pioneer work in such novel applications as moving sidewalks and collapsible tanks for liquid storage.

People who work in this 7 billion dollar industry are proud of another thing, too: the help so many thousands of them are giving to America's Peace Power through the purchase of U. S. Savings Bonds. By regular purchases of Shares in America, these patriotic and forward looking people are reinforcing their own security after retirement. By this means they establish reserves for emergencies as well as for long range family projects, like education and home building.

If your company has not, thus far, set up a Payroll Savings Plan, you can start immediately. Just telephone your State Savings Bonds Director and accept the help he is anxious to give you. Or write to Savings Bonds Division, U. S. Treasury Department, Washington, D. C.



Harold E. Kalb is shown here at his work in one of the great manufacturing plants of the rubber industry. Like many thousands of his fellow craftsmen, Mr. Kalb is using his company Payroll Savings Plan to contribute regularly to the Peace Power of his country.



Chilton's MOTOR AGE



THE U. S. GOVERNMENT DOES NOT PAY FOR THIS ADVERTISEMENT. THE TREASURY DEPARTMENT THANKS, FOR THEIR PATRIOTISM, THE ADVERTISING COUNCIL AND THE DONOR ABOVE.



A BARREL OF PROFIT!

Get this NEW Demonstrator FREE—buy Monro-Matics by the Barrel!

Now, a great new idea to help you sell shock absorbers like you've never sold them before! Packed in a steel barrel that doubles as a hard-working display are 14 of the most popular Monro-Matic shocks and 4 Monroe Super Load-Levelers. Fastened to the underside of the barrel lid is a shock absorber demonstrator. Flip the lid, weight the barrel with sand or water, and the demonstrator is ready to clinch many a sale for you! **DON'T MISS OUT ON THIS ONE! See your Monroe jobber now!**

BD-18 Assortment {	14 Monro-Matic Shock Absorbers
	4 Super Load-Levelers
Your selling price	\$228.20
Cost	\$140.90
YOUR PROFIT	\$87.30

FREE

\$10 Shock Demonstrator
 \$ 5 Painted Barrel Test Stand
 2 Shock Absorber Window Banners
 2 Load-Leveler Window Banners
 10' Plastic Outdoor Banner
 100 Hand-out leaflets

MONROE AUTO EQUIPMENT COMPANY, Monroe, Mich.
 In Canada, Monroe-Acme Ltd., Toronto, Ontario
 In Mexico, Mex-Par, Box 28154, Mexico City
WORLD'S LARGEST MAKER OF RIDE CONTROL PRODUCTS

MONRO-MATIC®
SHOCK ABSORBERS

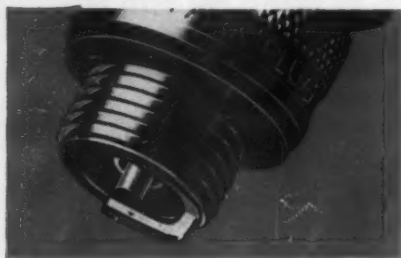


MONROE

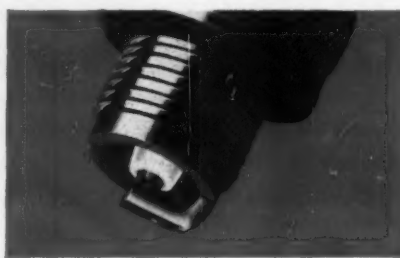
new-car ACtion new sales



Engineers specify AC for more new cars. It's the brand that's best for replacement, too. Here's why—



Only AC has the exclusive "Hot Tip"—that heats faster and cools faster to stay clean longer...



The exclusive "Extended Shell"—specially engineered for Pontiac, Buick, Ford, Lincoln and Mercury cars...



The exclusive "Solid Core" resistor—specially engineered for Plymouth, Dodge, DeSoto and Chrysler cars.

get the selling edge with

for your customers . . .

ACtion for you!



**AC's continuous advertising . . .
in magazines and on radio, TV and
billboards . . . helps keep AC products
moving to your customers.**

AC's round-the-clock, round-the-calendar advertising sells hard: In magazines—leading consumer, trade and special interest publications . . . on radio—covering 96% of the nation's listeners . . . on TV—reaching into millions of customer homes each week . . . and on outdoor billboards—covering all important markets. AC advertising helps build the traffic that spells more AC sales and profits for you.

AC Spark Plug  The Electronics Division of General Motors

And—here are other advantages you get when you stock and sell AC:

- Wide accessory line of the highest quality products—sold and promoted by qualified field personnel.
- Finest sales assistance based on market research, distributor councils, and continuous sales training programs.
- Better profit margins through faster turnover; plus, AC's continuous product improvement policy.
- Greater spark plug replacement potential—because ACs are original equipment on more new cars than any other brand.



fire-ring spark plugs

Cooling Systems Continued from page 39

and contraction of the metals surrounding the head gasket may later start a pinpoint combustion leak. Do not overlook the cylinder head joint merely because the car is new. Some new vehicles may have leaking head gaskets which should be corrected.

In all these cases, the cylinder head joint should be checked as it is the one physical-mechanical origin of engine-cancer that can be inexpensively controlled in the field.

Detecting Engine-Cancer

Due to the high pressures encountered in the combustion chambers of today's high compression engines, it is not safe or practical to subject the cooling system to the same pressures to force a fluid back through a small defect to locate or determine if a combustion leak exists in the engine. The correct time to find the leak is in its early

Continued on page 96



"It'll Be A Long Fly To Left Field, Williams, Will Drop It and Johnson'll Get A Triple."

AAC Announces Guide Book for Meetings

"How to Hold More and Better Meetings with customers and prospects" is a 40-page illustrated guide book published by the Automotive Advertisers Council. The book is available as an aid to jobbers, distributors, and manufacturers of automotive service products. It is based on a survey of independent garage owners, car dealers, service station operators, and on the combined experience of jobbers and manufacturers.

The book shows how to present more complete and effective information on current products and selling techniques to retail dealers.



There are so many Plus-es in the

P&D-IZE

IGNITION TUNE-UP PROGRAM

developed by your automotive wholesaler and P&D, that you'll want to be a part of it — but Quick!

It's designed especially for garage and service station owners and it includes just about everything to get you more business from this most profitable part of your industry. Besides the complete line of P&D ignition parts, finest made, the P&D-ize program through your wholesaler gives you the latest test equipment, manuals, clinics, schools, and plenty of point of sale ammunition to help you get more tune-up jobs.

Get in touch with your P&D-ize wholesaler right now, or drop us a line for the complete story.



P&D MANUFACTURING CO., INC.

STARTING - LIGHTING - IGNITION

19-02 STEINWAY ST., LONG ISLAND CITY 5, N. Y.

Export Sales: Borg Warner International, 36 So. Wabash Ave., Chicago 3, Ill.



Harley J. Earl (photo above) has accepted appointment as Commissioner of the National Association for Stock Car Auto Racing. Mr. Earl retired in 1959 as vice president of General Motors. His recent appointment to NASCAR fills the vacancy left by the death of E. G. "Cannonball" Baker last May.

SERVICE FOR YOUR B&D TOOLS



Check the Yellow Pages under "Tools-Electric" for the location of the nearest Black & Decker factory service branch or authorized service station.

Free tool inspection when requested • Genuine B&D parts used • Factory-trained technicians • Standard B&D Guarantee at completion of recommended repairs • Fast service, reasonable cost, always.

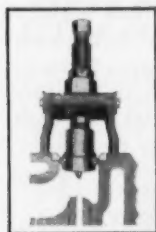
Or write for address of nearest of more than 50 branches and service stations to: THE BLACK & DECKER MFG. CO., Dept. 5112-S, Towson 4, Md.

Black & Decker



QUALITY TOOL SERVICE

Remove Valve Seat Rings in ALUMINUM MOTORS



the Safe,
Fast,
Easy Way

with a Bishman VALVE SEAT PULLER. Pulls valve seats from any aluminum engine, at any angle, without danger of damaging head or block.

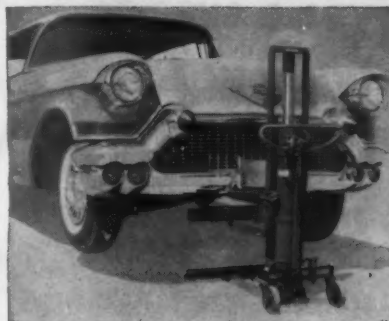
The Bishman 100% universal valve seat insert tool handles seats from 3/4" ID to 3 1/2" ID, is essential equipment in correct servicing of aluminum engines, where an incorrectly pulled valve seat can mean a costly re-seating job. Check these features: Reversible legs, adjustable stops to prevent side slip, pilot rod for perfect alignment with seat and valve guide, depth adjustment, quick changeable pulling heads in full range of sizes.

Ask your Automotive Equipment Jobber for complete information.

Bishman MANUFACTURING CO.
ROUTE 2, OSSEO, MINN., U.S.A.

Chilton's MOTOR AGE • December 1960

FOR PERFECT LIFTING OPERATIONS...



LIFTS
3000 LBS.
ON
125 LBS.
OF AIR
LINE
PRESSURE

Branick

AIR-OPERATED

"DELUXE"

BUMPER SERVICE JACK

Easy to position Quick to Raise. Lifts all four wheels with one deluxe jack and two jack stands Large rubber pads prevent bumper damage and slippage Owner assured of safe dependable service at very little maintenance cost High lift extension available at small extra cost.

BRANICK MFG. CO., INC.
FARGO, NO. DAKOTA

HOW SERVICE GARAGES,
GASOLINE SERVICE STATIONS
REFRIGERATION REPAIRMEN

CAN MAKE **BIG MONEY**
on a **4¢** INVESTMENT



Vornado is increasing its nation-wide service franchises.

There's big money in servicing Vornado Auto Air Conditioners, as an authorized Vornado Warranty and Service Station. All you need to invest is the price of a postage stamp. A letter to the Vornado Auto Air Conditioner Corporation will start you on the road to BIGGER PROFITS AND A BETTER INCOME.

No special equipment necessary. You will have exclusive rights to service Vornados in your area.

plus

- You will be paid by the factory for all service on warranted Vornado Auto Air Conditioners.
- You will be trained by a Vornado Field Engineer.
- You will be listed in Vornado's local and national directories.
- You will be a member of a nation-wide service team. This gives you more prestige in your community and more profits for your business.

HURRY AS THIS OFFER IS OPEN FOR A LIMITED TIME ONLY
TO MAKE BIG MONEY WITH VORNADO, WRITE TODAY:

Vornado AUTO AIR CONDITIONER CORP.
SERVICE DIVISION

30 Washington Street, Brighton, Mass.
A Division of Automatic Radio Mfg., Inc. World Famous for Over 40 Years



My PRIDE Cushion-Grip Screwdriver is the finest ever made. The Neoprene grip never slips, even when my hand is wet or oily. I can turn screws more tightly, but the grip never hurts my hand.

It's got a precision cross-ground point . . . a bolstered blade of high grade, hardened alloy tool steel . . . winged shank for extra strength . . . is hammer and shockproof . . . and oil, brake fluid, gas or dirt don't hurt the Neoprene handle.

No wonder everyone wants to borrow my PRIDE Cushion-Grip Screwdriver.

They ought to get their own. You can, too. Just ask your Purolator Supplier.

PRIDE

The Mechanic's Screwdriver

See the companion line — **PRIDE Redhead Screwdrivers**
... 80 different sizes for every need

CHILTON MANUALS PAGE



By Paul A. Murphy
Editor of Chilton's
Flat Rate and
Auto Repair Manuals

Cardboard Covers on Radiators

Mechanics who cover the radiator with cardboard should take into consideration that cooling air does more than cool the radiator. For instance, generators mounted to the lower left or right of the engine can be dangerously overheated when the cooling air is blocked at the base of the radiator. Vehicles with voltage regulators and batteries mounted just behind the radiator need a flow of air in the general area to maintain a voltage control.

Since the battery is an electro-chemical device, and chemical action is speeded up or retarded by temperature changes, it is of utmost importance that the charging circuit be kept within normal operating temperature range.

Perhaps it is better to consider the engine compartment as a wind tunnel designed to carry off heat and fumes normally produced in today's high compression engines.

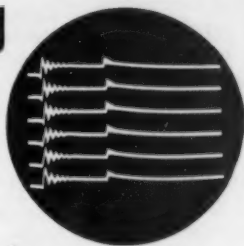
Therefore any modification of this wind tunnel could produce temperatures around engine accessories far above normal. For this reason it is better to adhere to the present design rather than change the air flow.

Cold Weather & Shock Absorbers

Viscosity of most shock absorber fluids is directly affected by temperature. When this fluid is warm it has a tendency to flow easily. When cold, it will tend to thicken and become sluggish.

When shock absorbers are operated in cold weather, the movement of the fluid, which is heavy or thick due to the low temperature, may cause a noise in the internal valve mechanism. As the fluid warms up due to operating action, its viscosity changes. This permits it to flow more freely. It also allows the valves to operate smoothly and quietly. Shock absorber noises which occur under low temperature conditions, and go away when the car is driven, should be considered normal.

YOU DO MORE TUNE-UPS BECAUSE YOU SEE MORE!



The Du Mont
EnginScope gives a
complete picture!
A trace for each cylinder.

So much can happen to an ignition system you need clearly defined details — and lots of them — to do a top-notch tune-up job. The fabulous Du Mont EnginScope enlarges every detail of each cylinder's ignition cycle — making your job easier and more exact.

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Quickly and Permanently



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Several Thousand in Operation

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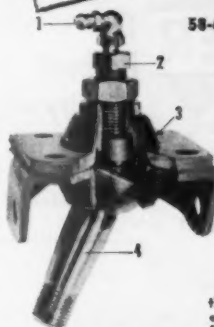
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Engineered to end front end troubles . . . proved on the road! A complete concept for solving front end looseness, hard, noisy steering and excessive tire wear on popular make GM cars.

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- ☐ CMC Kit for '60 thru '68 Cars
- ☐ CMC Ball Joint Kit for ALL GM, Ford and Chrysler cars.
- ☐ Carlson Full Line Catalog.

Name _____

Address _____

Cooling Systems Continued from page 92

stages before engine-cancer can do any amount of real damage. Heretofore, this has been a very difficult task.

Today, modern mechanics always check the tightness of a cooling system by first pressure testing with one of the many pressure devices

available. After assuring themselves of mechanically tight joints; then a chemical test is made to make sure that combustion areas are gas and pressure tight. One method of making the chemical test is a device called the Bloc-Chek.

The Bloc-Chek is simply a small chemical laboratory containing a fluid which is extremely sensitive to combustion gases. This small chemical laboratory enables the mechanic or service station operator to check an engine for combustion leaks and pinpoint their origin within a few minutes time. The unit is placed into the radiator opening, and a sample of the air or gases in the cooling system are drawn up through the liquid by means of an aspirator bulb. If any combustion gases are present, the fluid turns from its original blue color to a bright yellow. This is a positive reaction and indicates that there is a combustion leak in the engine cooling system.

All engines should be tested after replacement of head gaskets, after torquing head bolts, before new or

used car delivery to customer, during trade-in appraisal, and before and after an engine tune-up or engine repair. Antifreeze or special liquid coolants should NEVER be installed into the cooling system of an engine without determining that the system is absolutely free from combustion leaks. Protect your customer's engine, and add additional service volume by checking their engines for external and internal leaks.



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SALES REPRESENTATIVE: National, top-rated auto parts manufacturer and distributor is expanding business and needs capable traveling salesmen, age 25-46, to sell industry's most outstanding line of over 3,000 fast-moving replacement parts, assortments and kits. Earnings \$8,000 to \$10,000 first year, increasing every year. Paid vacation. Complete, in-the-field training program at company expense. All supervisory positions filled from within. No investment required. Write today giving full work history and background. Box 8, c/o Motor Age, 5601 Chestnut St., Philadelphia 39, Pa.

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THE LAST



LAFF



The five-year-old visiting a young couple with a new baby, gazed at the small, red, wrinkled face for a long time, and then said solemnly, "So THAT'S why she hid him under her coat for so long?"

"I don't believe saying grace will be necessary," said father as he eyed a meal of leftovers. "Everything here has been blessed before."

Shot: That which, if some people have more than one, they're half.

You can't push yourself ahead by patting yourself on the back.

"Has your son's college education proved of any value?"

"I'll say it has. It cured his mother of bragging about him."

Housewife to butcher: "Please send me a dollar's worth of steak. Tell the boy if I'm not home to push it through the keyhole."

Irate Golfer: "You must be the world's worst caddy!"

Caddy: "Hardly, sir. That would be too much of a coincidence."

It's smart to pick your friends—but not to pieces.

Complaining wife: "My clothes are so shabby that if anyone came to the house they'd think I was the cook."



"Checking every belt increases turnover and profits on fan belts!"

says George Millikin, Owner

George Millikin Garage

1475 South Avenue, Youngstown, Ohio



"One of the important things I've learned in the more than twenty years I've been in the garage business is that time is money. Time saved is really money earned. That's why I like Gates Sales Tools, such as the Dial Finder, Catalog and Charts. They save time and lost motion in locating and installing the right belt. My customers appreciate the fact that the whole operation takes just a few minutes.

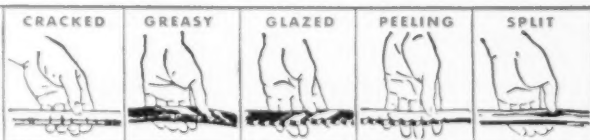
The minute it takes to check a belt by turning it over pays off in satisfied customers. They appreciate our thoroughness! And the customer acceptance of Gates Fan Belts makes for a rapid turnover of my belt stock and hence makes more money for me."

Start Making More Profit — TODAY — on Fan Belts!

Call your nearby Gates Supplier and tell him you want to "go" Gates. At no cost to you, he will have a factory-trained Gates Representative install attractive belt racks, clean up your present stock, provide Catalogs and a Belt Finder and give you methods that boost belt sales. He will also help you get your stock in shape for maximum profits without loss of one penny on present stock.

To find belt wear always
turn belt over — The underside
of the belt... not the top... tells
the true condition of the belt

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LIKE THESE:



World's Largest Maker of V-Belts

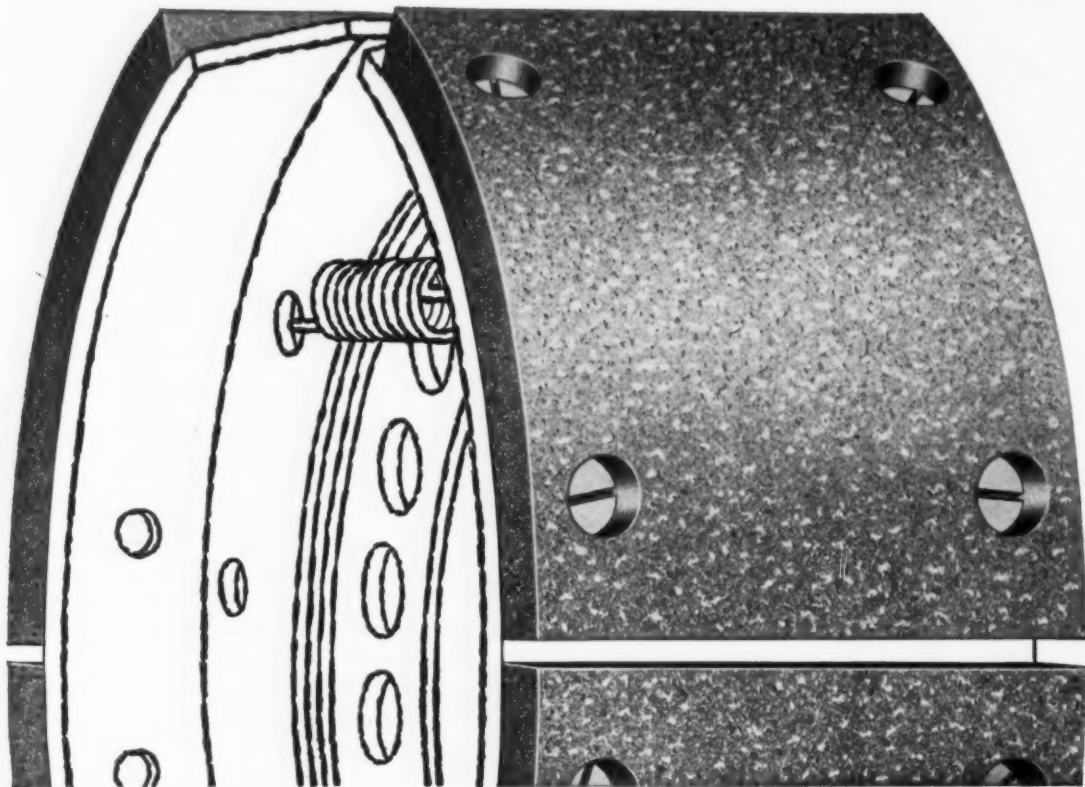
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TPA541

Gates Vulco V-Belts

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In fact, "Portoblocks" are made and finished to the same precision standards as Thermoid's first-line "Pressure-Forged" blocks.

Get the full story on new "Portoblocks" from your

Thermoid Distributor or write *Thermoid Division, H. K. Porter Company, Inc., 200 Whitehead Road, Trenton 6, New Jersey.*

New "Portoblocks" have:

- Safe stopping ability
- Excellent resistance to fade
- High-grade materials, including brass chips
- Precision ground for exact fit
- No-squeal construction

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